DOCUMENT RESUME

ED 474 506 SE 067 134

AUTHOR	Oltman, Marcie, Ed.
TITLE	Natural Wonders: A Guide to Early Childhood for Environmental Educators.
PUB DATE	2002-00-00
NOTE	80p.; Produced by Minnesota Early Childhood Environmental Education Consortium.
AVAILABLE FROM	Minnesota Office of Environmental Assistance, 520 Lafayette Road North, 2nd Floor, St. Paul, MN 55155-4100. Tel: 651-296-3417; Tel: 800-657-3843 (Toll Free); e-mail: clearinghouse@moea.state.mn.us; Web site: http://www.seek.state.mn.us.
PUB TYPE	Guides - Classroom - Teacher (052) -- Reports - Descriptive (141)
EDRS PRICE	EDRS Price MF01/PC04 Plus Postage.
DESCRIPTORS	*Cognitive Development; Elementary Education; *Environmental Education; Learning Processes; Science Activities; Science Instruction; Young Children

ABSTRACT

This guide is written for environmental educators who are interested in learning more about how and why young children think and act, and how they can use this information to design developmentally appropriate programs and activities. The sections of this guide become progressively more practical and specific from understanding the basics of how young children think to evaluating the developmental appropriateness of programs. Each section contains specific topics that explain the elements of child development and what it means to facilitate young children's learning. A chart is provided at the end of each topic with information and examples of appropriate practices associated with those topics. (Author/KHR)

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Natural Wonders

A Guide to Early Childhood for Environmental Educators

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Created by the Minnesota Early Childhood Environmental Education Consortium

Marcie Oltman, Editor

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Natural Wonders

A Guide to Early Childhood for Environmental Educators

Created by the Minnesota Early Childhood
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This project would not have been possible without the generous funding provided by the Minnesota Office of Environmental Assistance.

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Printed on paper with 50% total recycled fiber and 20% post-consumer waste.

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About this Guide

Environmental education organizations and other informal education venues have recently recognized the need to provide specialized programming for infants, toddlers, preschoolers and their families. Likewise, record numbers of parents, daycare providers and early childhood educators have begun seeking out nature centers, zoos and museums as places to help their not-yet school-aged children learn, grow and develop an appreciation of and love for nature. On the surface, it's a match made in heaven. However, unlike teachers in the formal school system who specialize in certain age groups, informal educators have to be ready and able to provide dynamic, interesting, relevant and appropriate programs for all ages—from preschool to senior citizens—often at a moment's notice.

While this kind of versatility is necessary, it can lead to one-size-fits-all programming that leaves preschoolers behind. But the more we learn about the brain and how experience affects growth and development, the more we see the need to specialize our approach to educating young children. Thanks to educators and researchers like Rousseau, Piaget, Froebel and Montessori, we've known for decades that children are not just smaller versions of adults, nor are preschoolers smaller versions of school-aged children. From years of research and practice, we know that very young children—infants, toddlers and preschoolers—are fundamentally different than older children and need to be taught in fundamentally different ways.

Since the late 1980's, the National Association for the Education of Young Children (NAEYC) has led the way in defining what those ways are. This information has been available to early childhood educators for years, but has not been translated for use in environmental educational settings—until now.

This guide was written especially for naturalists and environmental educators who are interested in learning more about how and why young children think and act and how they can use this information to design developmentally appropriate programs and activities. However, it is not intended to be a recipe book. You won't find a prescribed method for teaching about maple syruping or pond study. Although we do provide guidelines on what makes a program or activity developmentally appropriate, we recognize that everyone's situation is different and allow for as much flexibility as possible.

How to use this guide

The sections of this guide become progressively more practical and specific—from understanding the basics of how young children think to evaluating the developmental appropriateness of programs and everything in between. Each section contains specific topics that explain in greater detail the elements of child development and what it means to facilitate young children's learning.

At the end of each topic, a chart is provided detailing information and examples of most appropriate, somewhat appropriate or least appropriate practices associated with those topics. We have provided this chart as a gauge educators can use to identify where their teaching methods currently are on the developmentally appropriate continuum and what they can change about their methods to make them more developmentally appropriate. No one is developmentally appropriate 100 percent of the time. But if you challenge yourself to keep progressing along the continuum, you'll find it becomes easier and more rewarding for you and the children.

Practicing developmentally appropriate education is a constant and evolving process. Even veteran early childhood educators must evaluate their practices on a regular basis and adapt them to changing situations and children. The best way to evaluate your programs for developmental appropriateness is by being an active learner yourself—experiment, explore, seek questions and answers, test theories and invent new ways of approaching learning.

And don't forget to have fun!

Acknowledgements

This guide is the culmination of a two-year project of the Minnesota Early Childhood Environmental Education Consortium with generous funding from the Minnesota Office of Environmental Assistance. The authors would like to gratefully acknowledge everyone involved in the project and the creation of this guide.

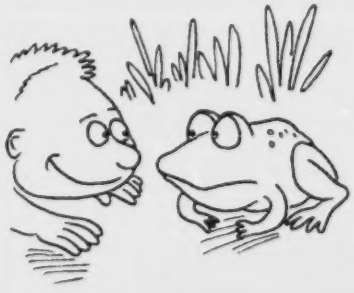
To the sponsoring organizations that offered support, meeting space and in-kind financial assistance: Minnesota Children's Museum, Tamarack Nature Center, Ramsey County Parks and Recreation, Como Zoo and Conservatory, City of St. Paul, Dodge Nature Center, Dodge Nature Preschool, Tri District Community Cultures/Environmental Science School, Project WET, Minnesota Department of Natural Resources, Duluth Aquarium, Ney Environmental Center, Moorhead State University Regional Science Center, Quarry Hill Nature Center and the Minnesota Office of Environmental Assistance.

To the individuals who supported the project by contributing ideas, time, expertise and encouragement: Karen Stimpson, Myra Smisek, Jeff Ledermann, Kelly Finnerty, Bekah Stendahl, Joey Schoen, Kathleen Mountain, Barb Poblete, Michelle Blodgett, Sheila Williams Ridge, Dave Metzen, Sarah Sivright, Jim Roe, Ken Finch, Kelly Osborn, and Mark Hoffman.

To the individuals who served as reviewers of early drafts of the guide and provided valuable feedback and editorial comments: Mary Adams, Michelle Anderson, Patti Bailie, Helen Bartee, Cheryl Bauer, Arta Cheney, Kathleen Cohen, Jenna Daire, Sandra Gavin, Judy Gibbs, Beth Girard, Paige Guetter, Jen Hagen, Karrie Holler, Margie Jones, Michelle Kelly, Louie Kolberg, Shelly Lewis, Corinne Lines, Elaine Loranz, Christine Lukes, Becky McConnell, Lori Olson, Jennifer Perry, Becky Rosendahl, Pat Rummenie, Kim Schilla, Sue Shockey, Glenn Shoemaker, Bekah Stendahl, Alyssa Szepi, Suzanne Trapp and Terry Wittnebel.

Special thanks to Colleen Schoenecker of the Office of Environmental Assistance and Greg Allen of Minnesota Children's Museum for help and support in managing the project.

And last but not least, to the individuals who patiently worked with naïve writers, met very tight deadlines with grace and good humor and who helped produce this wonderful resource: Nora L. Koch, Mary Kate Boylan, Peter Quinlan and Tara Lundborg.



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Marcie has published articles in the monograph *Environmental Education at the Early Childhood Level, Cooperative Learning*, and *Legacy* and serves as a consultant on exhibit and building design, early childhood environments and early childhood environmental curricula for clients around the country. She is on the board of the Minnesota Association of Environmental Education and an advisor to the Early Childhood Outdoors Institute in Omaha and the Dodge Nature Preschool in West St. Paul, Minnesota. Marcie has worked at Minnesota Children's Museum since 1994 in exhibit and curriculum development, interpretation and as the coordinator for Project GreenStart, the Museum's environmental education initiative for young children.

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Nikki is the current president of the Minnesota Association for Environmental Education and has served on their board since 1999. She is a city-appointed board member for the Lino Lakes Environmental Advisory Board. She also served as the chairperson for the Environmental Education Consortium from 1995 to 1999, creating partnerships between environmental educators and formal teachers to develop age-appropriate curriculum in environmental education. She is the director of education at the Dodge Nature Center, West St. Paul, Minnesota, developing curriculum and coordinating early childhood, elementary and middle school environmental education programs.

Introduction
Reed's Story

Reed, a naturalist at a community nature center planned a presentation on animal homes for a group of three-year-olds and their parents. Reed modified a 60 minute program into a 30 minute one thinking that young children have short attention spans, have trouble staying in one place, like to touch things and have difficulty taking turns. Several activities were to last only a few minutes each. She marked the floor with tape so children would know where to sit, collected real examples of animal homes and eliminated the need for turn-taking by deciding to choose only one child to help her put felt animals in their felt homes. Reed planned to end her program with a hike through the forest in search of real animal homes.

Despite those plans, the program did not go well for Reed, the children or their parents. Distracted by an aquarium and other objects in the room, it took ten minutes to get everyone settled. As soon as she brought out an old hornet's nest, all fifteen children mobbed Reed, eager to get their hands on it. She managed to get everyone back in place by promising to pass the nest around which ended up shredded into pieces. Using only one helper for the felt animal home activity was disastrous as it was accompanied by cries of "I want to do it!" and "When is it my turn?"

The craft activity was no more successful. As Reed carefully explained each step in the craft she noticed that the parents were making the craft while the children stood idly by. Knowing she was running short on time, she herded everyone to the door for the hike. She hurried along the trail, attempting to point out animal homes along the way. The group quickly became spread out, several children needed to go back to the building to the bathroom and the program fizzled out. Needless to say, Reed decided that preschoolers weren't her cup of tea.

The best intentions

Reed is not alone in her experience. We've all been there or done something like it. Thinking we are planning with young children's best interests in mind, we inadvertently plan inappropriate programs based on meeting our needs instead of the children's developmental needs. In Reed's case for example, it seems logical to respond to short attention spans by planning short activities. In reality, this doesn't help children extend their attending abilities and may only exacerbate the problem. *Adults tend to react to the nature of young children by placing limits on individual behavior rather than creating supportive situations where they can freely and actively participate.* By doing so, we may be creating negative experiences with nature instead of the intended positive experiences and making more work for ourselves in the process. Reed made her program choices on deficit-based assumptions (what she thought children couldn't do) instead of on how she, the program and the environment could best support the emerging abilities of her young audience.

Following the guidelines offered in this manual will help you plan appropriate, productive and joyful early childhood environmental education programs. Children will have room and time to play, explore, experiment, run, leap, balance and climb; time to nurture friendships and learn about caring and sharing; and a chance to discover for themselves the beauty and wonders of nature.

Section I:
Understanding Young Children

Understanding Young Children

Developmentally Appropriate Practice

What does it mean?

Developmentally appropriate practice (DAP) is an early childhood education standard that was first described by the National Association for the Education of Young Children. According to NAEYC, developmentally appropriate practice is matching the learning environment—the physical set-up, materials, schedule, curriculum, teaching methods and so forth—to the developmental levels of children. It means understanding the developmental changes that typically occur from birth through age eight (and beyond), variations in development for individuals and how we can best support their learning and development during these years.

There is no magic formula for developmentally appropriate practice. Educators make decisions day by day, minute by minute, based on knowledge of how children develop and learn, the individual children and families in question and the environmental, social and cultural context (Bredekamp & Copple, 1997).

Developmentally appropriate practice in early childhood environmental education means making program choices that emphasize and support both the individual and collective abilities of children.

Why is it important?

Developmentally appropriate practice is based on decades of research and knowledge of how children grow and develop and are guidelines by which we can measure our effectiveness. The power of developmentally appropriate practice lies in the educator's ability to make choices and decisions about what is best for the children and families he or she serves. We all know that educational practices are most effective when they are attuned to the way children develop and learn—that is, when they are developmentally appropriate.

What are the benefits of using developmentally appropriate practice?

Children have better comprehension and retention.
Because material is presented in a manner best suited to their developmental stage, the material is absorbed better than it would have been if it was designed for older children.

There are fewer struggles to get children to engage in the program.
Material presented in a developmentally appropriate manner is more interesting to students and naturally grabs their attention.

Children and adults can learn together.
Following a child's lead often takes us in a much more interesting direction than any adult prescribed curriculum.

More diverse programming can reach more students.
Creating developmentally appropriate materials requires more diverse forms of interaction and presentation and reaches more diverse learning styles.

Why don't educators use developmentally appropriate practices?

We tend to stay with a teaching style we are most comfortable with.
We tend to rely heavily on props, scripts or visual aides to do the teaching instead of allowing for more personal discovery, interaction and relationship building.

We tend to focus more on sharing facts about nature than on the process of learning.

What are possible behavior issues related to developmentally appropriate practice?

Often there are perceived behavior concerns when, in fact, the opposite is usually the case. In developmentally appropriate programs, children have more freedom to think and do for themselves. Providing well-structured programs with the freedom to make choices actually keeps behavioral issues to a minimum. There are usually more behavior-based problems in programs that are rigidly didactic, require children to sit and listen for long periods of time or don't encourage open-ended exploration. However, it may be necessary to change approaches for certain individuals, cultures and or abilities. Some children may require more structure, fewer options or less stimulation. Developmentally appropriate practice is by definition, tailoring programs to meet the needs of particular individuals and groups.

Want to know more?

Bredekamp, S & Copple, C. 1997. *Developmentally Appropriate Practice in Early Childhood Programs*, revised edition. Washington D.C.: National Association for the Education of Young Children. ISBN 0-935989-79-X. Excerpts available at newhorizons.org/naeyc.html

Developmentally Appropriate Practice: Constructivism

MOST DEVELOPMENTALLY APPROPRIATE	SOMEWHAT DEVELOPMENTALLY APPROPRIATE	LEAST DEVELOPMENTALLY APPROPRIATE
Activities are attuned to the child's level of cognitive, physical and social development including props, setting, language and timing. Learning is easier for the child and teacher.	Programs are presented at an appropriate level in language but other aspects may be inappropriate. There is some struggle but most of the concepts are comprehended.	Information is presented at an inappropriate level involving props, setting, language and timing. Children learn little and are either bored or overwhelmed.
EXAMPLES		
Various learning stations such as water table with pond life, painting table with water colors, pond puppets and costumes and so forth are set up around the gathering area. Children are encouraged to choose at will between the activities offered. They are free to move about the area, play alone or with others, and explore materials at their own pace.	Various learning stations are set-up around the gathering area and children rotate from station to station at the teacher's direction. Specific outcomes are expected at each station.	Children sit quietly while a naturalist explains the water cycle using words like *transpiration* and *precipitation.*

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Developmental Stages

What does it mean?

Psychologist Jean Piaget first described young children as having a unique set of physical, cognitive, social and emotional attributes that differentiates them from any other age group. He described the *constructivist theory*—that children construct knowledge out of their exploratory actions on the environment. This theory forms the basis of the modern interactive, *hands-on* approach to learning.

Piaget also described how children's thinking changed over time. By observing children's behavior, he noted four distinct stages: sensorimotor, preoperational, concrete operational and formal operational. (See accompanying chart.)

Why is it important?

Young children think differently than adults. Because of this, we have difficulty interpreting their actions, emotions and reactions. They have little concept of the past, present and future; they confuse reality with fantasy; they think that everyone feels, thinks and acts like they do. It is essential for us to understand not only how young children think but why they think what they do and change our methods accordingly.

What are the benefits to recognizing developmental stages and characteristics?

Knowing your audience.

Knowing how young children think and feel is essential to developmentally appropriate practice and good teaching in any setting.

It helps us respond to children appropriately.

Our first response to a child's burst of illogical thought is too often to either correct them or dismiss it as cute. However, if we respond by asking questions, we can find out a lot about the mysteries of learning and thought.

What are the challenges to recognizing developmental stages and characteristics?

It's difficult for adults to really think like children.

Once you've gone through the developmental stages yourself, it's nearly impossible to backtrack. Try to imagine having no concept of the past, present and future or believing in the tooth fairy. The best we can do is to incorporate theory into our teaching practices and try to remember what life was like without logical thought.

Why don't we recognize developmental stages and characteristics more?

We weren't taught to recognize these stages.

Unless you've taken classes specifically for early childhood education, it's likely you weren't exposed to the developmental theories of learning in young children. It takes practice to recognize certain characteristics. It's hard to master the mysteries of young children when you teach them infrequently. But once you catch on, the payoffs are immense.

What are possible behavior issues related to not recognizing developmental characteristics?

Unrealistic expectations.

Expecting too much or too little from children almost guarantees difficult or "inappropriate" behavior. The more you know about children's abilities the better chance you'll have for a successful program.

Want to know more?

Miller, Karen. 2001. *Ages and Stages: Developmental Descriptions And Activities, Birth through Eight Years.* Beltsville, MD: Telshare Publishing. ISBN: 0-910287-16-3.

Piaget's Four Stages of Development

According to this concept, there are four stages of cognitive development:

SENSORIMOTOR STAGE Babies and toddlers, birth to two	• Babies are a bundle of reflexes. • Very little intention to their movements. • Rely on adults and environment for stimulation. • Cannot think of an object when it is out of sight. • Increasing awareness of relation between own actions, objects and environment. • Major milestone is object permanence—holding an image or event in memory.
PREOPERATIONAL STAGE Preschoolers, two to six	• Little knowledge of cause and effect. • Difficulty taking another's point of view. • Think inanimate objects have human feelings. • Cannot understand that something remains the same even though it changes form. For example, a peanut butter sandwich cut into four pieces is *more* than one cut into two pieces. • Lack logical thought. For example, a child might think that the moon follows him wherever he goes. • Major milestone is the emergence of logical thought—thinking is no longer limited by perception.
CONCRETE OPERATIONAL STAGE School age, six to eleven	• Begin to think more logically. • Begin to reason and understand abstract concepts. • Understand moral concepts of rules, intentionality and justice. • Major milestone of this stage is the mastery of logical thought.
FORMAL OPERATIONAL STAGE Adolescents, twelve to nineteen	• Can reason about the past, present and future. • Can think about their own thoughts and feelings as if they were objects. • Major milestone is the development of hypothetical and deductive reasoning abilities.

Constructivism

What does it mean?

One of the most widely used theories describing how young children learn is the constructivist theory by Jean Piaget. It states that all knowledge comes from an individual's interaction with the environment. Piaget proposed that children construct knowledge out of their exploratory actions—either physical (manipulation of objects) or mental (wondering about something). Exploration is then focused on constructing or making sense of the world by actively interpreting experiences. They will often make up or construct answers to their many questions in an attempt to make sense of something that is puzzling them. Because they lack the ability to think logically, these "naïve" theories can be interesting and lead to creative conclusions. For example, a four-year-old may conclude that the sun goes down *because* she goes to bed, and in her limited experience this seems true. Attempting to correct her with a scientifically accurate explanation will probably be fruitless because she's in the throes of preoperational, illogical thought. The educator's job is to provide her with rich experiences, ask thought-provoking questions like "Does it go down when I go to bed?" encouraging her to revise her theories and most of all, to trust the process.

Why is it important?

Understanding and promoting constructivism is fundamental to teaching young children. It can also be the most challenging to naturalists and environmental educators. We are scientists, eager to share our own knowledge of the outdoors. It is easy to lose sight of the importance of the individual experience and opportunity for creative thought. The preoperational child needs to make the transition into logical thought. Effective educators need to facilitate and support children's learning at the children's level not the educator's. In the words of Jean Piaget, "Every time we teach a child something, we keep him from inventing it himself . . . that which we allow him to discover himself will remain with him."

What are the benefits of constructivism?

It is active, hands-on learning at its best.
It is the heart and soul of environmental education.

Why don't we use constructivism more?

We may be afraid children aren't learning anything or are learning the wrong things.
Children are learning beings. It is not possible for them to go though an experience and not learn from it. However, mastery and understanding take a long time, and there is a lot for a little person to learn. For example, it'll probably take more than an afternoon with even the most talented educator for a young child to truly understand the life cycle of the frog.

It takes time and effort to learn the process.
Just like breaking a bad habit, it takes practice and careful thought to encourage creative thinking. But it's all worth it when you see that light bulb go on!

What are possible behavior issues related to constructivism?

Children feel trusted.
Children recognize that their ideas are respected and not trivialized. This can lead to mutual trust and excitement about learning.

Give an inch and they'll take a yard.
Be prepared for creativity and experimentation to explode! Your tolerance levels for messiness and noise might be challenged but if you relinquish a little control, the rewards are priceless.

Want to know more?

DeVries, Rita, et.al. 2002. *Developing Constructivist Early Childhood Curriculum: Practical Principles and Activities*. New York: Teachers College Press. ISBN 0-8077-4120-5.

Forman, George & Kuschner, David. 1983. *The Child's Construction of Knowledge: Piaget For Teaching Children*. Washington D.C.: National Association for the Education of Young Children. ISBN 0-912674-92-X.

Forman, George & Hill, Fleet, 1984. *Constructive Play: Applying Piaget In The Preschool*. London: Addison-Wesley. ISBN 0-201200-84-8.

Developmentally Appropriate Practice: Constructivism

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Children are encouraged to explore, invent and create theories about life, death and everything in between. Adults ask open-ended questions and provide resources to aid children in their "constructions."	Children are encouraged to invent explanations for things and adults respond by choosing books and other resources for the children that give factual information.	Children are discouraged from creating their own theories. Adults react to theories in appropriately.
EXAMPLES		
Listening (without correcting or interrupting) to children discuss what's frozen in the ice on the pond. Asking questions such as "What do you think is under the ice?" and "How do you think the ice got on the pond?" then taking them out on the frozen pond and drilling a hole with an auger and other ice activities.	When overhearing children discussing what's frozen in the ice on the pond, the teacher interrupts their conversation to read them a book about water and explains the three phases of water and what makes it freeze.	Listening to a child's theory about how ice got on the pond and responding with either a neutral, "Oh, that's nice," a scientific, "Water turns to ice when the temperature is 32 degrees or colder." or worse yet, an incredulous, "That's not how ice gets on the pond! Where'd you get that idea?"

Egocentrism

What does it mean?

When talking about young children, egocentrism does not mean selfish or arrogant. Rather, it means that a child experiences everything from only one point-of-view—his or her own. They assume everyone else sees, feels and experiences things just as they do. Much of the way children behave can be attributed to their egocentrism and their inability to see things from another's perspective. For instance, in describing a sibling's birthday party, a three-year-old might describe it like this. "My sister had a birthday yesterday and I had birthday cake and I went to Chuck E. Cheese and I ate fish pizza and then I threw-up." Nothing is more important to young children than sharing things that are personally happening to them.

Why is it important?

Egocentrism is the cornerstone of how young children think.

Understanding the limits to how young children think enables us to tailor our programs to meet their needs. Lecturing young children on the wonders of the water cycle has nothing to do with them personally. However, playing in rain puddles and catching raindrops on their tongues has everything to do with them.

What are the benefits to recognizing egocentrism?

Fewer behavior problems.

Recognizing egocentrism and planning accordingly can make a large difference in your programs. For example, if you plan on illustrating plant adaptations to a group of four-year-olds by asking for one volunteer to stand up in front and put on pieces of a plant costume, you'll soon have 16 preschoolers wondering when it will be their turn. Most would be so focused on their own desire to dress up they couldn't listen to or enjoy another's experience. Allowing every child to simultaneously act out a sprouting plant with all its parts is a more effective way to participate for preschool children.

Why don't educators recognize egocentrism more?

Our own egos get in the way.

We tend to be so focused on our own agendas and teaching everything we know about our subject, we forget to make it relevant to young children. The best way to make it relevant to them is by including each individual and their whole bodies in the experience.

We don't make the time.

In trying to do too many things in a short period of time, we don't allow for young children to share things with us. For example, when reading storybooks, we tend to dislike interruptions from children because it slows us down. From their point of view however, sharing their thoughts as they occur is just as important as listening to the story.

What are possible behavior issues related to egocentrism?

Children may have difficulty waiting their turn or sharing.

This may result in excessive fidgeting, talking or disruption. Avoid activities that only one or two children can do while others wait their turn. Emphasize activities that everyone can

do at once and make sure you have an abundance of materials to avoid the hoarding instinct.

Children have an intense, yet skewed, sense of fairness.

Make sure there is enough of the same thing for everyone. For example, you've discovered that you don't have enough Teddy Grahams for the whole group so you add regular graham crackers, figuring they are just about the same thing. Any three-year-old can and probably will tell you, " That's not fair." In other words, everyone should get the same amount of the exact same thing. If it's not possible for everyone to have exactly the same thing, let children choose their own items.

Want to know more?

Elkind, David. 1989. *Child Development and Education: A Piagetian Perspective.* Oxford University Press. ISBN: 0-195020-69-3.

Peterson, Rosemary & Felton, Victoria. 1986. *Piaget Handbook For Teachers and Parents.* Early Childhood Series. NY: Teachers College Press. ISBN 0-807728-41-1.

Developmentally Appropriate Practice: Egocentrism

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
All children are allowed to experience the same activities at the same time. Children are continually supported and encouraged to share their stories, thoughts and feelings.	All children have a chance to participate but each person has to wait for everyone else in the group to have a turn before going on to another activity.	Children are expected to listen to the instructor and answer questions without embellishment or story telling.
EXAMPLES		
Listening to children tell their own stories without hurrying or interrupting them. Everyone can participate at their own pace.	Reading or telling a story and encouraging children to comment or ask questions throughout.	Requiring all children to sit and listen to a story without allowing questions, interruptions or providing an alternate activity.

Understanding Young Children
Teaching to the Whole Child

What does it mean?

For children to learn effectively and joyfully, they must be engaged. It is impossible to separate the cognitive, physical and social and emotional aspects of development when discussing and planning activities and programs for young children. Children are learning about everything, all the time and with every fiber of their being. If you want something to stick in the brain, it must first go through the body and heart.

Why is it important?

This is the prime time in life when all three aspects of development converge and must be treated with equal importance and relevancy. Learning how to make friends and maintain friendships is just as important as learning how to count or read. For typically developing children neither can be accomplished without moving and mastering one's own body in space.

What is important about the mind, heart and body of preschoolers?

The mind

As discussed previously, a major characteristic of the preschooler is egocentricity. They have difficulty taking another's point of view and think everyone thinks, sees and acts like they do. They frequently talk to themselves or to their toys rather than to each other. They may think that inanimate objects such as trees or stuffed animals have human feelings and desires. They are bound by their perceptions of the world and therefore can think in only concrete terms. One way children begin to broaden their egocentric perceptions is by adopting roles and acting out make-believe scenarios and stories. This helps them see things from different perspectives.

Because preschoolers lack logical thought, they often confuse appearance and reality. Toddlers and preschoolers often think that a Halloween mask changes the identity of the person wearing it and believe that a straight stick partially submerged in water actually gets bent because it appears that way. They begin to reason by making simple, but often mistaken associations between ideas. For example, a child may think that the sun goes down *because* it's time to go to bed.

The heart

The social and emotional life of preschoolers is filled with constant challenges. They are navigating their way through a sea of social rules and contexts and finding out through trial and error which rules work. They struggle with recognizing, accepting and expressing feelings as well as responding to the feelings and needs of others.

Developing strategies for initiating and maintaining play with other children is a major challenge and gradually moves from solitary to cooperative play. Providing children with the time, place and freedom to interact with each other is essential to good preschool programming in any setting.

The body

Preschool children are learning about how their bodies move and becoming aware of how to manage this movement. They need lots of experiences with lots of different objects and types of movement to master a wide variety of physical skills. Gross motor experiences such as running, balancing, climbing, throwing, kicking, swinging and so forth, enhance physical and motor fitness. Fine motor control is developed through

manipulating small objects like blocks, puzzles, beads and play dough as well as pointing. A well-rounded program includes a balance of gross motor and fine motor activities.

What are the benefits to teaching to the whole child?

When you attend to the whole child, you will engage children more fully and make a greater impact on their thinking.

If you work with young children, you are going to deal with their physical, social, and emotional needs whether you plan to or not. By taking the whole child into consideration when planning, your plans are not derailed by these needs.

Working with joyful children is fun!

Attend to their social needs, and enjoy watching them make connections with you and each other.

Deal with their physical needs, and watch them learn to keep their balance when walking over varied terrain, handle tweezers and other tools for researching nature, and manage eye-hand coordination to use magnifying glasses.

Attend to their emotional needs, and experience emotional connection with children and their connection with nature.

Why don't we teach to the whole child more often?

If naturalists don't have background in child development, they may not understand the importance of including emotional, social, and physical needs as well as cognitive needs.

Young children's emotions can be overwhelming.

Rather than getting emotionally involved with children, some people find it easier to pretend they don't have feelings.

If your experience is with older children, you are less accustomed to dealing with other aspects of development. Older children find it easier to compartmentalize their learning.

Naturalists tend to think of teaching content as being their job and do not understand the need to engage all areas of development to help children learn.

What are possible behavioral issues related to teaching to the whole child?

If children are allowed or encouraged to interact with each other, conflicts will come up. They will come up anyway, but this allows the instructor to maintain some control though anticipating problems and planning for their resolution. When children are allowed physical outlets, they need to move enough to satisfy their needs before they are ready to sit still again. Instead of unfocused, short-term running around, involve children physically in learning for longer periods of time.

Encouraging children to express their feelings takes time. You can't let one child make a personal connection out-loud ("My dog died just like the dog in the story!") and not expect the other children to also express their feelings. Plan time for this to happen.

If children develop an emotional connection with you, you may experience conflicts with them. Addressing children's feelings creates more complex relationships, even if you only know them for a few hours.

Want to know more?

Gurewitz, Sydney. 1983 *The Sun's Not Broken, A cloud's Just in the Way*. Mt. Rainier, MD: Gryphon House. ISBN 0-876591-09-8.

Griffen, Elinor Fitch. 1982. *Island of Childhood*. New York: Teacher's College Press. ISBN 0-807726-90-7.

Developmentally Appropriate Practice: Teaching to the Whole Child

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Activities and programs engage children's physical, social, emotional and intellectual needs.	Activities and programs engage children's cognitive and physical needs but emphasize cognitive.	Activities and programs concentrate on content and cognitive skills.
↓ EXAMPLES ↓		
In a program about birds, children are read books that are both non-fiction cognitive) and fiction (emotional). They dramatize being fed in the nest (emotional, social), touch bird feathers (physical), climb trees to view bird nests	Children play a matching game of birds and their eggs (cognitive), learn the names of backyard birds (cognitive) and fly around like birds (physical).	Children listen and watch as a naturalist teaches them to identify birds using flash cards.

Notes

Understanding Young Children
Multiple Intelligence Theory

What does it mean?

Multiple Intelligence (MI) is a theory developed by Howard Gardner of Harvard University in 1983. He theorized that people have at least eight different intelligences. Every person has capabilities in each area but some areas are stronger than others. The following are the eight intelligences:

Logical-mathematical (numbers, reasoning)
Linguistic (reading, talking)
Bodily-kinesthetic (moving, doing things with your body)
Musical (songs, patterns, sound)
Interpersonal (understanding other people and social interactions)
Intrapersonal (self knowledge)
Spatial (drawing, mapping)
Naturalist (understanding of the physical world, nature)

Why is it important?

Young children do not compartmentalize their learning. Just focusing on science curriculum without looking at all ways children can develop understanding makes the program less effective. As educators we can use this concept to see children as individuals with specific areas of strengths and limitations and adjust our teaching accordingly. In doing so, we can combine many of the intelligences into one activity and meet several children's needs at a time.

What are the benefits to teaching to multiple intelligences?

You can reach more children in less time.
Informal educators rarely get to know individual children well because our contact is limited. If subjects are taught in many ways, we will reach more children than the traditional methods of teaching—using lectures, books or demonstrations.

It makes planning easier.
Using multiple intelligence helps to provide variety in programming options.

Why don't educators use multiple intelligence theory more?

We think of ourselves as scientists.
Naturalists often focus their lessons on getting children to understand concepts and facts. As a consequence, we often plan for the naturalist intelligence, neglecting the others.

We're unfamiliar with multiple intelligence theory.
We often do what is comfortable and familiar rather than try new techniques.

What are possible behavior issues related to multiple intelligence theory?

If children are truly engaged, they are less likely to behave inappropriately.
By offering a variety of activities that address many of the multiple intelligences, educators should experience fewer behavior issues.

Want to Know More?

Campbell, Linda & Dickinson, Dee. 1999. *Teaching And Learning Through Multiple Intelligence*. Upper Saddle River, N.J.: Prentice Hall. ISBN: 0-205293-48-4.

Developmentally Appropriate Practice: Multiple Intelligence

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Educators consciously plan activities and provide materials that span all of the eight intelligences equally.	Instructors incorporate the most obvious and convenient intelligences when planning activities.	Instructors focus on just one or two methods of teaching without considering different learning styles or intelligence.
EXAMPLES		
• A class about birds might include the following: • Listening to bird calls (musical) • Playing a bird identification lotto game (logical-mathematical) • Dramatizing with bird puppets (interpersonal) • Talking about personal experiences with birds (intrapersonal) • Making bird feeders (spatial) • Moving like a bird (Bodily-kinesthetic) • Reading stories about birds (linguistic) • Examining bird nests (naturalist)	• A class about birds might include the following: • Playing a bird identification lotto game (logical-mathematical) • Reading stories about birds (linguistic) • Lecturing about bird identification (linguistic)	• A class about birds might include the following: • Lecturing about bird identification (linguistic) • Examining bird nests (naturalist)

Diverse Learners

What does it mean?

In order to create the best possible experience for children, diversity can and should be addressed and planned for. Diversity includes race, language, socio-economic status, disability and even learning style. A quality program will take these areas of diversity into account and will make every effort to address them sensitively.

Programs that strive to create an environment and curriculum that is inclusive go beyond the surface level of "political correctness" and understand that it is in all children's best interest to be provided with a larger, more accurate picture of the world.

This means being aware that all students are not coming from homogenous backgrounds with the same base of knowledge. It means making a genuine effort to create programs that connect familiar things to children.

Educator Emily Styles of the Seeking Education, Equity and Diversity (SEED) project encourages teachers to develop experiences for students that create both windows and mirrors. Mirrors are opportunities for children see their own experiences reflected. Windows allow them to see the experiences of others. Activities or experiences that may be a window for one child could be a mirror for another. If children do not see themselves in an educational experience, they are less likely to retain the information. Connecting learning that occurs in your programs to children's home and community experiences is respectful and sets a foundation for learning.

Why is it important?

The United States' population is becoming increasingly diverse. Some of the most obvious and quantifiable changes are happening in the racial make up of our nation. The Bureau of Educational Statistics predicts that by 2030, children of color will make up over half of the students in U.S. schools. A *Children of 2010* report published in the *Los Angeles Times* (March 1999) predicted that by 2050 no single ethnic group will constitute a majority of the U.S population. These statistics have enormous significance for all educators. If the goal of an environmental education program is to create a positive connection between children and the environment, not taking diverse factors into account can sabotage the goal.

What are the benefits of diverse learning?

Providing experiences that children can connect to prior knowledge increases their learning. We know from research in educational psychology and brain function that children learn new things based on what is already established. New knowledge is categorized into what already makes sense. Learning that is isolated from what is familiar or known is less likely to be long term.

Early childhood pioneer Lev Vygotsky stated the idea of socio-cultural development, in which learning and psychological development occur through experiences that happen in a social and cultural context. Although this is now a widely accepted concept, many educators overlook the experience of a student that may be different from their own experiences. By making an extra effort to provide an inclusive experience, the learning becomes more meaningful for all students.

Why don't educators take diversity into account more often?

Educators may see multicultural education as a separate field from environmental education.
This couldn't be farther from the truth. The future of our planet is a concern for all people and learning to make connections with the natural world is crucial for all people to ensure its survival.

Educators think that a great deal of background knowledge is needed.
While there is a wealth of information about diverse populations and about how to work most effectively with diversity, the most important piece is awareness. Educators who are aware that diversity exists and who make an effort to be inclusive are taking an essential first step.

Educators feel uncomfortable talking about diversity.
Young children are aware of differences in people. When these differences are ignored or overlooked, they get the message there is something wrong with the differences. The more that human diversity is discussed and celebrated, the more children will understand and feel comfortable with the diversity around them.

Educators think taking diversity into account is only necessary if there is a noticeably diverse group.
Inclusive education is the best practice no matter what the group. A child in summer camp may be in a much more homogeneous group during summer than she is in her public school during the rest of the year.

What does representing diversity look like?

Represent reality and avoid stereotypes.
Books and materials used (posters, photographs, music, props and so forth) should show a diverse group of people. Addressing diversity does not mean that every program and every project has to have a specific cultural focus, but the underlying message must be one of inclusion.

Varying levels of comfort and knowledge are accepted.
For example, a child living in an apartment building may have had minimal contact with the world outside of his or her apartment. Venturing out into a nonurban area might be frightening. Another child from the same building may have no fears of the same area. Inclusive instructors provide a variety of ways to participate and value all kinds of knowledge.

Welcome diversity.
Educators should find out as much as possible about the children attending a program and adapt accordingly. This could be as simple as learning some common Hmong pronunciations of children's names or giving a welcome greeting in one of the children's home languages.

Want to know more?

Derman-Sparks, Louise. 1989. *The Anti-Bias Curriculum: Tools for Empowering Young Children.* Washington D.C.: National Association for the Education of Young Children. ISBN 0-935989-20-X.

Menkart, D., Lee, E., Okazawa-Rey, M. 1998. *Beyond Heroes and Holidays: A Practical Guide to K-12 Anti-Racist, Multicultural Education and Staff Development.* Washington D.C.: Network of Educators on the Americas. ISBN 1-878554-11-5.

Developmentally Appropriate Practice: Diverse Learners

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Fear is dealt with respectfully. Diverse tools and props are used. An effort is made to obtain and include knowledge about local cultural groups.There is an accurate representation of gender, ability, race and culture.	Fear is handled but with annoyance. Some diversity is represented. Some effort is made to be inclusive but it isn't considered an integral piece of the learning. Expectations are that all children will be comfortable and familiar with outside activities, getting dirty, and actively participating. Minimal effort is made to represent diversity in materials or curriculum.	It is assumed that all children are comfortable and familiar with outside activities, getting dirty and actively participating. No effort is made to represent diversity in materials or curriculum. Stereotypes are reinforced.
EXAMPLES		
During a program in December, a naturalist reads *The Snowy Day* and other books that show a variety of people enjoying the snow. Children act out poems about animals getting ready for winter. Children are given a choice between going on a walk through the forest or exploring close to the building. Stories are told about people who have never seen snow before because it is always hot where they live. Natural winter events are emphasized instead of the holidays.	During a program in December, a naturalist reads *The Snowy Day* and everyone sings Jingle Bells. Books about snow are available that only represent one racial group or gender enjoying the snow. During a walk through the forest, a few children become concerned about being so far from the building. The naturalist makes a joke and says they'll go back to the building soon.	During a program in December, a naturalist reads a book that shows only white children sledding in the snow. The group is led in singing Christmas songs and the children are asked what they want Santa to bring them for Christmas.The naturalist leads everyone on a hike to the forest to see the newly fallen snow, even though several children do not have hats or boots. Precut paper trees are decorated with Christmas ornaments.

Notes

Understanding Young Children

Learning through Play

What does it mean?

Play is the natural activity of children. It is a mental or physical activity whose sole conscious aim is amusement, relaxation, enjoyment and/or self-expression. Researchers have described six elements of play, known as the disposition of play (Rubin as referenced in Rodgers and Sawyer, 1988):

1. Play is intrinsically motivated.
2. Play is relatively free of externally imposed rules.
3. Play is carried out as if the activity were real.
4. Play focuses on the process rather than any product.
5. The players dominate play.
6. Play requires the active involvement of the player.

Why is it important?

The most important things in life are learned through play. Although play is often considered frivolous or ineffective, play actually benefits children's learning in several ways. Physical play is necessary for children to learn through their kinesthetic intelligence. During play, children form their own context from things they are learning and experiencing in everyday life. Imaginative play allows children to become someone or something else, to do things they've never done before or have seen others do often. Play allows children to explore lines of thought, either extending or breaking patterns. It gives children opportunities for success with a minimum of risk or penalties for mistakes. Play is where it all comes together—the mind, heart and body are fully engaged and —voila—learning happens!

What are the benefits of play?

Playing is fun.

Play is open ended and not goal oriented.

Everyone can do it.

Play naturally falls to the level, or varying levels, of participants.

Learning can be spontaneous.

Children will introduce new ideas based on what they are experiencing at that moment.

Play can relieve children's stress.

Stress can build up from too many teacher-directed activities, emotional or social tension and worry. Play can be used as a release, distraction or as a means to work out stressful scenarios.

Why don't educators use play more often?

Play is not seen as effective.

Educators often worry that children are not learning if they are playing. They may feel a need to control what children are learning by lecturing or providing study sheets.

There isn't time in the schedule.

If it feels like there is no time to play, reexamine the schedule. How much time is spent in teacher-directed activities? In transitioning from one activity to another? In explaining rules and directions? Play should be at the heart of every program.

What are possible behavior issues related to play?

Inevitable conflicts between children.

When two or more children play together there are bound to be conflicts. Resist the temptation to rush in and solve the problem for them unless there is danger of people or property getting hurt. Instead, help children

solve their problems by helping them express how they feel and what they need.

Want to know more?

Jones, Elizabeth & Reynolds, Gretchen. 1992. *The Play's The Thing.* NY: Teachers College Press. ISBN 0-807731-71-4.

Rogers, Cosby & Sawyers, Janet K. 1988. *Play in the Lives of Children.* Washington D.C.: National Association for the Education of Young Children. ISBN 0-935989-09-9.

Smilansky, Sara & Shefatya, Leah. 1991. *Facilitating Play.* Psychosocial and Educational Publications. ISBN 0-962596-30-2.

Van Hoorn, Judith, et al. 1999. *Play At The Center Of The Curriculum.* Saddlebrook, NJ: Prentice Hall. ISBN 0-136119-97-2.

Developmentally Appropriate Practice: Play

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Open-ended playtime is provided with several options including dramatic, block and sensory play. Spontaneous play is interwoven throughout activities. Instructor follows the child's lead.	A limited amount of time is set aside for play. Activities are set-up with some choices for students, but end result is predetermined.	Teacher's agenda is followed precisely. Activities do not allow for creative interpretation.
EXAMPLES		
Various play stations with a variety of materials are set-up around the room or gathering area. Children are encouraged to choose among the play materials and are allowed to play for a minimum of 20 continuous minutes.	Children are given only a few minutes at the end of the session to play an organized game such as tag.	Children are given a preselected activity such as a coloring sheet to complete in a given time period.

What You Need to Know About Children Under 6

WHAT YOU NEED TO KNOW ABOUT CHILDREN UNDER 6	WHAT YOU CAN DO TO HELP THEM LEARN & GROW
They think differently than we do. (developmental stages) • Concrete thinkers. • No concept of time. • Appearance is reality. • Cannot think logically or abstractly. • Think inanimate objects have feelings, thoughts and desires. • Can think of only a few things at one time.	Choose topics relevant to their lives and limited experience. Choose concrete topics—clouds vs. weather, squirrels vs. mammals. Use simple language—avoid clichés. Use mystery, puppets, etc. to capture attention. Avoid referring to the past or future. Give one or two directions at a time and repeat activities.
Everything is about "Me!" (egocentrism) • Think everyone thinks, feels and acts like they do. • Rigid sense of equality and fairness. • Unable to distinguish between intentional and unintentional acts.	Use puppets, costumes and dramatic play to give children a change of perspective. Make sure everyone can participate to the same extent. Provide enough time and materials for everyone.
When in doubt, they make it up. (constructivism) • They construct their own understandings of how the world works. • Develop their own theories about the world based on prior knowledge and experience.	Instead of correcting inaccurate information, find out why they think what they do. Use open-ended questions to challenge them to think in different ways. Facilitate learning rather than teach facts.
They can do it themselves! (play, constructivism) • Learn best when they can decide for themselves what, when and how to do things.	Provide lots of materials for experimentation. Provide choice whenever possible. Provide enough time and space to explore things thoroughly.
They are learning about everything all at once, all the time. (Teaching to the whole child) • Learning occurs through every domain—social, cognitive, physical, emotional, and so forth. Playing is learning.	Integrate natural concepts in with social play, material manipulation and hands-on experimentation. Incorporate movement into programs.
They make sense of their world through play. (play) • Like to experience new things in familiar ways and familiar things in new ways. • Approach materials in four stages: awareness, exploration, inquiry and utilization.	Use familiar stories, songs, nursery rhymes and so forth but add a new verse or twist. Don't jump into teaching facts before children have had a chance to explore and experiment.

Section II:
Planning for Active Learning

Planning for Active Learning
Teaching Vs. Learning Objectives

What does it mean?

Many who were trained as formal educators recognize learning objectives as a way to clarify the purpose of programs. These are usually concrete statements that describe what the student is expected to know after participating in the lesson. However, when teaching very young children it is unrealistic to set these types of expectations. Instead, we should set the goals and objectives for ourselves as facilitators and supporters of learning. This allows for ecological concepts and developmental skill-building to be combined into an appropriate activity for the age group.

Learning objective example: *At the end of this lesson each student will be able to list three animals that use camouflage as protection.*

Teaching objective example: *The purpose of this activity is to provide opportunities for outdoor exploration and to introduce the concept of camouflage through a game of animal hide and seek.*

Why is it important?

Stating your teaching objective helps keep the focus on the child's experience and addresses the learning needs of the whole child rather than just factual, cognitive information. In this way, the process, not the product, of learning is emphasized.

What are the benefits to teaching objectives?

Keeps expectations realistic and appropriate.

Remember, as a teacher of young children, your goal is to facilitate learning and help children discover things for themselves. You have little control over what children are actually learning, especially in an informal setting with limited time. Be realistic about the experience you want them to have versus facts you want them to know.

Teaches to the whole child.

Young children are learning every minute of every day. However, they are learning in more ways than just cognitive. They learn about their world through language, physical movement, social interaction, emotional challenges, music and more.

Encourages open-ended activities.

Providing open-ended exploration of topics leads to more questions and many possible answers. This is inquiry-based learning at its best.

Why don't educators use teaching objectives more?

We aren't trained to use teaching objectives.

Formal K-12 systems tend to train teachers to use learning objectives in order to measure success efficiently. Early childhood systems favor teaching objectives and observation, which tend to emphasize learning effectiveness.

Results aren't easily measurable.

We often want and expect instant measures of success. Young children develop in their own time. Educators of young children need to not expect them to know what *we* want them to know when *we* want them to know it.

What are possible behavior issues related to objectives?

Inappropriate objectives often lead to crankiness, oppositional behavior, failure to complete the objectives and disappointment—and that's just the teachers! Keep your expectations realistic and you'll have a great class.

Want to know more?

Katz, Lilian & Chard, Sylvia. 2000. *Engaging Children's Minds: The Project Approach* (2nd ed.). Greenwich, CT: Ablex Publishing. ISBN 1-567505-01-8.

Developmentally Appropriate Practice: Teaching Objectives

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Teaching objectives are process oriented with both content and developmental goals included.	Teaching objectives are process oriented but contain content, not developmental, goals.	Learning objectives are product oriented and emphasize factual learning only.
EXAMPLES		
• The purpose of this activity is to provide opportunities for children to classify different types of animals through a sorting game. • The purpose of this activity is to introduce children to salamanders and to practice matching skills by finding two salamanders that look alike.	• Children will learn amphibians from reptiles. • Children will learn the difference between a marble and a spotted salamander.	• After this lesson, children will be able to describe the difference between a reptile and an amphibian. • After this lesson, children will be able to list the names of three native salamanders.

Appropriate Topics

What does it mean?

Naturalists and environmental educators are blessed with a plethora of topics and themes on which to plan a program. Nature provides an inexhaustible supply of interesting topics from amphibians to zooplankton. However, what is appropriate for one age group may not be appropriate for another age group for a variety of reasons. Young children are concrete thinkers. They have difficulty thinking about abstract concepts. For this reason, program topics must be boiled down to their simplest components—*things that you can see, feel, smell, hear or taste are appropriate topics for young children.* Another guideline is to stick to local topics that children see every day.

Why is it important?

Preschoolers learn best from concrete examples, things they can experience first hand. Abstract topics confuse children and frustrate their efforts to learn. For example, the water cycle is too abstract for preschoolers to understand. However, a program on rain would be perfect and programming could center on playing in things that rain makes—mud and puddles. Starting with simple, concrete topics sets the stage for understanding more abstract topics in later years.

Are there any exceptions?

Sometimes you'll meet a child who is extremely interested in advanced and abstract concepts such as dinosaurs, space exploration or African wildlife. Their enthusiasm may even spread to the rest of the group. By all means, follow their lead and provide as many resources (books, toys, pictures, games, music) as you can to feed their curiosity. For the most part, however, plan programs about local and familiar topics and relate it to special interests whenever possible.

What are the benefits to using appropriate topics?

It's more enjoyable.
By using age-appropriate topics the whole program becomes easier to design. Both you and the children will enjoy the program.

It provides more opportunities to use all or most of the senses.
For example, think of all the ways you can experience apples first hand—picking, eating, cutting, baking, making cider and so forth.

Why don't educators use appropriate topics more?

We forget that young children don't think like us.
Not understanding how young children think and learn can lead to the misperception that a child's program can simply be a watered down version of an adult program. But because their brains haven't caught up with us, they need the basics.

What are possible behavior issues related to inappropriate topics?

Children may become frustrated and disinterested.
Children are more likely to behave inappropriately if they don't see a direct connection between themselves and what they're learning.

Want to know more?

Bredekamp, S & Copple, C. 1997.
Developmentally Appropriate Practice in Early Childhood Programs, (revised edition).
Washington D.C.: National Association for the Education of Young Children.
ISBN 0-935989-79-X. Excerpts available at newhorizons.org/naeyc.html.

Developmentally Appropriate Practice: Appropriate Topics

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Topics are simple and easy for children to experience immediately and first hand. If you can see, touch, taste, hear or smell it, it's a concrete topic.	Topics are concrete but difficult to experience first hand.	Topics are abstract and children have a difficult time understanding or relating to them.

EXAMPLES

GOOD TOPICS FOR THE MIDWEST	NOT-SO-GOOD TOPICS FOR THE MIDWEST*	ABSTRACT TOPICS FOR ANYWHERE
Flowers Butterflies/bees Animal tracks Frogs Squirrels Wind Turtles Leaves Apples Winter birds Snow Dirt/soil/mud Insects Gardening	Monkeys Tigers Plants of the desert Sea life Rain forest animals * With the exception of specialized facilities such as zoos, and similar facilities.	Ecosystems Weather Habitats/biomes Rain forests Geologic time Universe Invasive or endangered species

Authentic Experiences

What does it mean?

Authentic experiences are real or as close to real as you can get. Anyone who has had meaningful encounters in their lives knows the difference between real, simulated and fake. Imagine the difference between seeing a grizzly bear in the Alaska wilderness, viewing one at the zoo, playing a simulated grizzly bear computer game or watching a cartoon of a generic bear raiding a picnic basket. Each experience is less authentic than the previous one and teaches us less as a result.

These may be extreme examples, but countless everyday experiences have the potential for authenticity. As adults, we benefit from a lifetime of experiences to enjoy and remember. When we choose to buy bread from the store it is as a timesaving convenience, not to deny ourselves the pleasure of homemade bread. But if we have experienced making bread from scratch or eating it fresh from the oven, we know the richness of that experience is undeniable—especially so for young children.

Why is it important?

Young children want, need and deserve authentic experiences with real objects. Because they are concrete thinkers, real experiences help them to learn about their immediate world and things that are relevant to their lives. In this age of technology, authentic experiences with real objects and environments can be hard to come by. Computer games take us into abstract worlds that don't exist. Toys with bells and whistles leave little to the imagination and everything, it seems, can be made into a plastic toy.

What are the benefits to authentic experiences?

They extend learning.

Real, authentic experiences provide the foundation to countless learning opportunities. They provide the context or hat rack upon which other experiences are hung. Learning can be extended farther and faster if it is based on the real thing.

Children should experience the real thing before other experiences.

For example, asking children to "fish" for numbered construction-paper fish cutouts without any prior experience with ponds, fish, or even aquariums, is an inauthentic experience. Contrast that with visiting a real pond and examining all kinds of creatures living there. That real experience can be later extended by looking at pond photographs, drawing or painting pond critters and then creating a game from what you know.

They are easily remembered.

Children's senses are heightened during authentic experiences—feeling the cool water of a mountain stream, smelling fresh pine needles, hearing a beaver slap her tail—are easily recalled once they've been experienced.

Why don't educators use authentic experiences more?

It takes a lot of work.

It is much easier to watch a video about pond life than go through the hassle of taking a field trip to the pond. Environmental educators are the exception to this concept. Most of the time, we are the field trip. We have the opportunity to provide the authentic, relevant experiences so many children are lacking. Our challenge then is to push ourselves to evaluate

all of our practices to ensure that we're practicing what we preach.

What are possible behavior issues related to authentic experiences?

Young children are still learning how to control their own impulses.

Real items often take a beating in the *hands-on* department. If an item is truly irreplaceable and can't be touched, put it in a clear case for viewing only. Don't handle it yourself while simultaneously telling kids they aren't allowed to touch it—this sends mixed messages. Always supervise small groups of children when handling fragile objects like bird nests or animal skins and demonstrate how to properly touch or hold them.

Want to know more?

Rivkin, Mary. 1995. *The Great Outdoors: Restoring Children's Right To Play Outside.* Washington D.C.: National Association for the Education of Young Children. ISBN: 0-935989-71-4.

Developmentally Appropriate Practice: Authentic Experience

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Children experience an activity or environment first-hand, using real objects, processes and appropriate equipment.	Children have a simulated experience via video or computer without ever having seen the real thing.	Children see only two-dimensional, (often cartoons or characatures) representations of objects, animals, processes or products.
EXAMPLES		
Children visit a real pond and use nets to collect insects, crayfish and other pond creatures. An aquarium or water table is set up in the classroom that contains real pond life. Children play with realistic replicas of frogs and fish in the water table.	Children read a book or watch a video on things that live in the pond. A water table is set up with plastic frogs, fish and other animals and children catch them with small nets.	Commercial posters of cartoon fish and flowers are hung up around the classroom. Children play *Go Fish* or *Hungry Hippo* during free choice time.

Inquiry-Based Learning

What does it mean?

Inquiry-based learning is focusing on children making discoveries independently or as members of a group. Children are encouraged to ask questions, experiment, use trial and error, discuss and evaluate. Inquiry is the point of the activity, not a way of getting children to the right answer.

To facilitate inquiry, ask open-ended questions whenever possible. When interacting with young children, adults often fall into the quiz bowl trap. Questions like "What color is that?" or "How many dinosaurs are there?" come easily to us but too many may inhibit a child's ability to reflect and reveal their own thoughts and perspectives. Instead, ask questions that you don't know the answers to. "What do you think would happen if . . ." or "If you were a bird where would you fly?" By asking questions with no right or wrong answer you'll find out how children think, not just what they know.

Why is it important?

Young children learn best through finding their own answers. This is a time for *learning to learn* rather than learning facts. When children discover that they can find answers to what puzzles them, they are learning the basics of scientific principles.

What are the benefits of inquiry-based learning?

Instruction will be individually appropriate.
Children will find the answers they are ready to understand. The focus remains on the process of learning rather than the facts.

Children learn to think scientifically.
Children who learn early to think creatively and problem-solve are more likely continue this type of thinking as they get older.

They can ask their own questions and find their own answers.
It is empowering for children to learn that they can find answers rather than needing to relying on others to give them answers.

Why don't educators use more inquiry-based learning?

Fear of losing control.
This kind of learning can get loud and may appear chaotic to someone unfamiliar with this type of education. Once instructors become accustomed to the activity level of children involved in inquiry, they recognize it as the sound of minds at work.

Concern that children won't learn.
Children will be less likely to have facts to parrot back than they would in a skills-driven program. Recognition of what children should be learning at this age, which includes attitude, passion and confidence, helps instructors to let go of the desire for children to know facts.

Concern that they will learn misinformation.
When children find their own answers and construct their own knowledge, sometimes they come up with less than the whole answer. Educators need to encourage children to revise their theories until they are developmentally able to achieve true understanding.

What are possible behavior issues of inquiry-based learning?

As with most creative ways of learning, inquiry can get messy, loud and perhaps chaotic but it's worth it!

Want to Know More?

Katz, Lilian & Chard, Sylvia. 2000. *Engaging Children's Minds:The Project Approach* (2nd.ed.). Greenwich, CT: Ablex Publishing. ISBN 1-567505-01-8.

Developmentally Appropriate Practice: Inquiry

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Educators listen to children and pick up on their interests and questions.They ask guiding questions to steer children to finding solutions. Educators find materials and create opportunities for children to follow their ideas. They challenge children's ideas (both correct and incorrect) to further their thinking rather than to direct them to the right conclusion.	Focus is on children's learning through discovery, but educators make sure children have accurate information rather than allowing children to find out for themselves. Some discovery activities are included.	Educators develop plans to control the outcome. Focus is on gaining factual information. Instructor tells or shows children and children repeat back what they were told.
EXAMPLES		
Children search for butterflies; observe where they land; look for clues to find out what they eat; look through books, at mounts and live butterflies; hypothesize about what makes a butterfly different than a moth through observation and so forth. Instructors challenge children's ideas and lead them into finding out more information.	Children are allowed and encouraged to observe butterflies, ask questions about and ruminate about the answers. However, incorrect information or theories are corrected by the naturalist.	The naturalist holds up different pictures of a butterfly's life cycle, telling children about each stage and ask the children to repeat the information.

Guiding Children's Behavior

What does it mean?

Guiding children's behavior means managing the behavior of young children in positive and respectful ways. It helps children recognize what it means to be part of a group and behave in socially acceptable ways. This *self-regulation* is a major part of social development and many factors influence a child's ability to control impulses, maintain friendships and solve conflicts. A large part of guiding children's behavior is creating an environment that minimizes stress and conflict and encourages appropriate, social behavior.

Why is it important?

It allows you to keep conflicts from being the focus of the experience.

Being proactive when dealing with children's behavior is the first step. You need to have clear expectations, create an environment that encourages cooperation and know how you will react to misbehaviors.

The good news is that adults still tend to be a greater influence on preschool children than their peers. Preschoolers are generally interested in pleasing adults. The less-than-good news is they have been less indoctrinated to school (and group) expectations than older children. Begin by assuming that children will behave if expectations are reasonable, their needs are being met and there is a climate of cooperation. Problems will then be minimized.

It is important to recognize that it is easier for an educator to change his or her expectations and offering more appropriate activities, schedules and interactions than it is to change the behavior of children.

What are the benefits of guiding children's behavior?

By focusing on appropriate expectations, instructors will spend less time engaged in power struggles.

The less time spent on trying to make children behave appropriately, the more time can be spent on the learning experience.

It is less frustrating and stressful for everyone.

Everyone—children, parents, staff—are all negatively affected by conflict and struggle. By being proactive you minimize the level of stress affecting the group and feel more in control.

Why don't educators focus more on guiding positive behavior?

It is difficult to discipline children when you have limited contact (perhaps just one class).

Many factors determine how children will behave on a given day. We've all gotten up on the wrong side of the bed, had too little sleep or been out of sorts at one time or another. Have a doable plan for dealing with minor and major problems and stick to it.

It can be uncomfortable to discipline children with their parents or other adults present.

An unwritten societal rule seems to prohibit us from disciplining another's child, especially when the parent is present. It's best to consult with the parent directly and privately if a child's behavior is disrupting the class.

Most educators have minimal training in this area.

There are ways to offset this. One suggestion is to volunteer in an early childhood classroom and observe how seasoned teachers deal with behavioral issues. Keep a journal of behavioral issues that are challenging to you.

Seek out other professionals for advice, read reputable early childhood behavioral guides and soon you'll see patterns and solutions emerge.

Preschoolers are most likely to behave cooperatively if the following occurs:

There is enough space and materials to go around.
If children must push ahead to see or receive materials, conflicts increase.

Their physiological needs are met (food, rest, temperature).
Make sure children are dressed appropriately for outdoor activities, the indoor temperature is moderate, the time of day is optimal for preschoolers (programs that conflict with nap time may be a problem) and offer a snack for a program longer than 1 ½ hours.

There is an optimal level of stimulation (not too much or too little).
A good guideline is to provide at least two slots per activity during free choice or gathering time. For example, if you are expecting twelve children for a program, offer six activities with enough space and materials to accommodate at least two children at a time.

The group size is manageable.
Even with small adult-to-child ratios, a large group size (more than 20) has too many personalities for easy cooperation.

There are more child-initiated than adult-directed activities.
You will find more misbehavior if children are expected to sit and listen to adults for extended periods of time.

Activities and class topic are developmentally appropriate.
If activities are interesting and understandable to children and topics are concrete, children are more likely to be appropriately engaged in learning and play.

When children behave inappropriately:

Even with the best planning, challenging behaviors will still come up. Steps for reducing the reoccurrence of these behaviors include the following:

Give children simple, clear expectations when a new activity begins.
For example, "We are taking a walk on the trail. We will leave the sticks on the ground as we walk."

Give children reasons for these rules.
"We leave the sticks on the ground because it is unsafe to walk or run with sticks."

If children break the rules, remind them of the rule and why.
"Please leave the stick on the ground. It isn't safe to run with the stick."

Giving children a choice often diffuses a power struggle.
"You can put the stick on the ground, or you can give it to me and I'll put the stick on the ground."

Don't phrase directives as questions or children believe compliance is optional.
"Leave the stick on the ground, please." rather than "Can you leave the stick on the ground?" If children do not respond to verbal directions, take action calmly and firmly. Take the stick from the child's hand and place it on the ground. "This is where the stick belongs."

If children repeat misbehavior, allow for a natural or logical consequence.
A natural consequence is something that would naturally happen—if you don't watch where you are walking you may trip over a stone. A logical consequence is something you as the adult would do as a result of an action. For example, taking hold of a child's hand if he doesn't watch where he is walking. If you use a logical consequence, explain what you are doing in a matter of fact way, letting the child hear that he has some control over what happened. "It seems hard for you to walk alone without picking up sticks. I will hold your hand to help you remember."

If children behave dangerously or aggressively

Educators often don't know children well, if at all, before programs. If it is possible to receive information regarding children's special needs (including behavioral) before class, do so. If not, you may find children who do not respond to low-key behavior management techniques. When this happens do the following:

Maintain safety first.
Protect children from others and from themselves. Hold out-of-control children if needed. Tell the child, "I won't let you hurt anyone and I won't let anyone here hurt you."

Have a plan for getting additional adult support.
Know if another instructor or office personnel can help you if a situation gets out of hand.

If a child is out-of-control on a hike or other less-secure environment, return to a building immediately.
Make a plan with her responsible adult (parent or teacher) for avoiding the conflict in the future if the child will return for other programs.

Want to know more?

Nelson, J., Duffy, R., & Erwin, C. 1998. *Positive Discipline for Preschoolers: For Their Early Years-Raising Children Who Are Responsible, Respectful, and Resourceful*. Rocklin, CA: Prima Publishing. ISBN 0-761515-15-1.

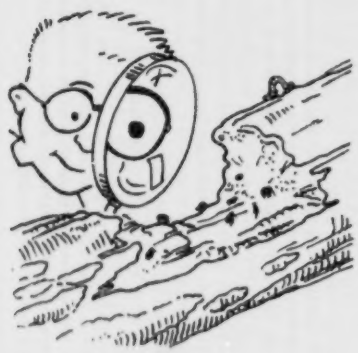
Developmentally Appropriate Practice: Guiding Behavior

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	INAPPROPRIATE
Children are given clear directions with just a few steps. Expectations are reasonable and logical. Children are given the benefit of the doubt, but hurtful or disruptive behavior is handled firmly and kindly.	Adults try to manipulate children into behaving with rewards and punishments.	Rules are arbitrary or inconsistent. Authority of adults is more important than children's learning. Children's behavior is rigidly controlled.
EXAMPLES		
When a child grabs a raccoon mount roughly, the adult gives the child a reason for handling the mount carefully. If child continues to harm the mount, adult redirects the child to a different activity.	When a child grabs a raccoon mount roughly, the adult says "Mrs. Raccoon will cry if you pull on her."	When a child grabs a raccoon mount roughly, the adult shames him and sends him to the time-out chair.

Section III
Essential Ingredients for Active Learning

Essential Ingredients for Active Learning

Hands-on Learning



What does it mean?

Hands-on learning is much more than touching and manipulating objects. It means actively participating in the learning process. It includes all the elements of good teaching—experimenting, testing cause and effect, discussing the various possibilities and making choices about what to do next. The more children have control over their own actions and choice, the more hands-on learning becomes.

Why is it important?

This is the heart of the constructivist learning theory (see Constructivism). Children need to be active agents in their own learning in order to transform their ideas and naïve theories into true understanding of the world around them.

What are the benefits of offering hands-on activities?

Young children learn best through hands-on activities.

They can involve all of their senses, their minds, bodies and hearts in the learning process.

Children like them.

Children are drawn to activities they can touch, transform and examine and they need less encouragement to become involved.

Children learn from each other.

When children are doing rather than listening, they will talk more and share their discoveries with each other.

Why don't educators offer more hands-on activities?

It requires a lot of materials and equipment.

It is less expensive to have a class that only uses written notes than a class that requires materials and equipment for each child to use. Using as much recycled, donated, rented or borrowed equipment as possible can alleviate this problem.

They worry that children will damage props.

Equipment like animal mounts are expensive and delicate. However, even very young children can be taught to handle equipment with care and respect.

Class preparation takes more time.

A class with hands-on activities needs a fair amount of preparation but the ease of the class experience makes it time well spent.

Tips

- Use low tables. Children will need to reach materials to handle them
- Use the floor. Many activities can be done sitting on the floor.
- Organize storage. Having materials easily accessible in labeled tubs or another system will keep it easier to access.

What are possible behavioral issues in hands on learning?

You must have enough equipment to involve all of the children at the same time.

Expecting some to participate and others to watch them participate will create conflict.

Children need to know limits in handling materials and props.

Handing a child a delicate skull and being angry when it is broken is not reasonable. Is something is very fragile, hold it "with" the child.

If children sit before handling an object, they will be able to keep their balance better and are less likely to drop or break it.

Children are likely to take learning to the next level.

When using hands-on learning, don't expect children to just do what you have instructed them to do and then wait for the next direction. They will find a new and imaginative (and perhaps dangerous or destructive) use for materials and props once they are no longer interested in what you have directed them to do.

Want to know more?

Hohmann, Mary & Wiekart, David. 1995. *Educating Young Children.* Yipsilanti, MI: High/Scope Press ISBN 0-929816-91-9.

Developmentally Appropriate Practice: Hands-on Learning

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
All props and materials are used by children freely. Adults demonstrate the expected use of props and then allow children to handle them.	Some props and materials are handled by children. Others are shown or explained without opportunities for hands-on experiences.	Adults demonstrate with props and then show children the props. All lessons are done as lecture or demonstration only.
↓ EXAMPLES ↓		
Children have an opportunity to examine insect specimens up close with lenses and other tools. While examining insects, children are verbally encouraged to notice body parts and compare different kinds of insect to each other. Children walk to look for insects in their natural habitat and notice what attracts insects to this particular place. Children can construct habitats to attract insects.	Children are given a lecture about insect body parts. Later, they take a walk to look for insects.	Children are shown parts of an insect's body with pictures and are told the names of each part.

Essential Ingredients
for Active Learning

Open-Ended Activities

What does it mean?

Open-ended activities are activities that can be used in more than one way. Block play and dramatic play are good examples of open-ended activities. The opposite is *closed* or *self-correcting* activities that can only be used correctly one way. Examples of closed activities include puzzles and matching games with only one right answer.

Why is it important?

Young children learn best through making discoveries for themselves. Through taking part in open-ended experiences, children can learn what they are ready to understand. For example, if children are given a stack of pictures of animals and told to make one pile of animals that live in the water and one that live on land, children either have the knowledge to complete the task or not. If they are able to complete the task, then the learning is done. If instead, children are given a stack of pictures and are asked how they can go together, children can categorize based on where they live, what they eat, which animals they like or do not like, which live in the wild or can be pets, which lay eggs or give live birth and so forth. The learning continues and everyone can complete the task because the task is open-ended.

What are the benefits to offering open-ended activities?

Everyone can learn.
With closed activities, there is a narrow range of children who will benefit. Children who have enough understanding to complete and master the activity have no opportunity to go farther. With open-ended activities, children can naturally tailor the activity to their interests and abilities.

Children are empowered to learn.
Giving children open-ended activities encourages them to pose their own questions, test their ideas, share with their peers and take part in the scientific method.

Learning can be more spontaneous.
With closed activities, instructors must put each activity together to be used in one way. With open-ended activities, the same materials can be used over and over with different learning happening each time.

Educators have more opportunities for catching the teachable moment.
Open-ended activities help adults take on the role of facilitator, supporting rather than dictating what and how children learn. It allows for more flexibility, experimentation and discovery.

Why don't educators offer more open-ended activities?

Concern about what children are learning.
Educators may worry that if children are not following instructions for a closed activity, they won't be learning anything. By offering open-ended activities and observing how learning occurs, educators should become more confident in this style of teaching.

They want a product to send home.
Educators may worry that parents won't think they "got their money's worth" if the children don't bring something home. Instructors will see the parents responding to the excitement in their children's eyes and can be educated to not expect the pay off of a product.

They think children need closed activities to learn to follow directions.

Instructors may view closed activities as an appropriate way for children to learn to follow directions.There are many opportunities for children to learn to follow directions. Following directions to use snowshoes without falling over or following a recipe in a cooking experience are more useful ways to learn directional skills.

Want to know more?

MacDonald, Sharon, 2001. *Block Play: The Complete Guide To Learning and Playing with Blocks*. Beltsville, MD: Gryphon House. ISBN 0-876592-53-1.

Forman, George & Hill, Fleet, 1984. *Constructive Play: Applying Piaget in the Preschool.* London: Addison-Wesley. ISBN 0-201200-84-8.

Developmentally Appropriate Practice: Open-Ended Activism

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Appropriate, safe and durable materials are made available to children to use at will. No instructions are given.	Adults know what they want the children to make (a person, a pumpkin) but they are allowed to select their own materials.	Activities are set up for children with a demonstration, a model to follow, or other methods for adults to maintain control over the end result. Children are corrected if they use the materials *wrong*. Adults may also *fix up* the finished product so it looks *right*.
EXAMPLES		
During free-choice time, children build whimsical structures with tree blocks.	During free-choice time, children are told to build shelters for animals out of tree blocks.	During free-choice time, children make a home for a groundhog by coloring a photocopy of a groundhog, gluing it onto a craft stick and poking it into the center of a paper cup. The teacher shows everyone a sample of what it should look like.

Essential Ingredients for Active Learning

Choice

What does it mean?

Including choice in programs means that children may choose between more than one activity, and children have the choice not to participate in some activities.

Why is it important?

Most young children learn best through self-selected activity. Preschoolers have a longer attention span for self-selected activity than they do for activities mandated by adults. When they attend to an activity longer, they develop a greater understanding of the topic. For example, a preschooler may only be able to last through ten minutes of block play and then they are ready to try something new. However, this same child may work on an art activity or play in a sensory table for more than thirty minutes. Making good choices is one of the most important tasks for preschool children.

What are the benefits to offering choices?

Fewer power struggles.

When children are allowed to choose what they would like to do, they are more excited about activities and less resistant of directions. This makes a big difference when educators work with children for short periods of time and don't have the luxury of learning what strategies work best for avoiding power struggles.

Individualized learning.

Everyone has different strengths and weaknesses in their learning. This is easy to see with young children. Some learn best through trial and error, others want to learn collaboratively and work with peers, others need it explained while still others need to see for themselves. Through offering choices, educators enable children can learn about a topic in the best way for them.

Easier rhythm to the program.

When the educator has all of the children doing the same thing together, it is easy to run out of time or run out of planned activities. When children are given choices, the activities that go well get more time and the activities that don't go well can be ignored.

Why don't educators offer more choices?

Not trusting that children are learning.

Some people feel children are not learning about a topic if they are not controlling the children's activity.

Educators may believe that if all of the children are doing the same activity at the same time, they can be sure everyone *gets it*.

Unfortunately, they are underestimating children's ability to tune out what they are not interested in. Young children will actually get more out of an activity they have chosen.

Limited space.

It can be a challenge to find space for several activities at the same time in small rooms. If you offer four activities at the same time, and each activity accommodates four children, you'll have enough room for sixteen children.

Concern about supervising more than one activity at a time.

This is less important if you offer activities that children can do independently. If an adult must stand over a group to be sure they are doing an activity correctly, it is probably too complicated to begin with.

What are possible behavior issues related to providing choice?

Some choices are more popular than others.

Try to make all choices attractive and offer the most space and time to the most popular activities.

Children need to work independently.

Offering several activities at the same time means children need to be able to work without adult direction. Ensure that activities are open-ended enough (see Open-Ended Activities) to allow as much independence as possible.

Want to know more?

Bredekamp, S & Copple, C. 1997. *Developmentally Appropriate Practice in Early Childhood Programs*, (revised edition). Washington D.C.: National Association for the Education of Young Children. ISBN 0-935989-79-X. Excerpts available at newhorizons.org/naeyc.html.

Developmentally Appropriate Practice: Choice

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Program offers choice for children during as much of the program as possible. No activities are required, alternative choices are presented.	Selected activities are offered. Some activities are required, some are a choice.	Teachers decide what activity comes next and children are given little if any clue about what comes next.
EXAMPLES		
Stations or activity centers on birds allow several activities to take place simultaneously. One center might be painting with feathers, another looking at books about birds, another listening to a tape of bird calls, another examining kinds of nests, another group going on a bird hike and another acting out a story with bird puppets.	Several activities are offered but all children must complete feather painting and listen to a story about birds.	Time is divided into increments and children move as a group from one activity to the next. All children hear a bird story, then listen to birdcalls, then paint with feathers and finally take a walk.

Section IV:
Supporting Active Learning

Learning Stations

What does it mean?

Learning stations are *learning zones* set up in the outside gathering area or meeting room. Children are given the time and opportunity to explore them at their own pace. Stations are generally grouped to promote certain activities: books and writing area, block or building area, sensory area with water or sand play or play dough, art area, dramatic play area with costumes and props, science area and so forth.

Why are they important?

Learning stations promote choice and freedom of movement. They convey a sense of trust in the children by allowing children to choose what is important to them. As a result, the program is more responsive to the needs of individual children, rather than herding them around and treating them as a group.

What are the benefits to teaching with learning stations?

Learning stations create a welcoming environment.
When children arrive they may be feeling apprehensive. Having familiar activities set-up for them to choose from helps to ease them into a new space and routine.

It shows you have anticipated their needs.
Setting up an appropriate environment for young children is half the battle. The right environment encourages learning and play and discourages inappropriate behavior. It doesn't hurt your credibility with parents, either.

It says, "You belong here."

Why don't educators teach with learning stations more?

There is a feeling of lack of control.
Educators who are used to controlling children's activities may view learning stations as chaotic and unorganized.

There isn't enough time for "play."
Then make your programs longer. Children will have a more positive experience and probably learn more from free-choice activities than from other organized activities.

It takes a lot of time and effort.
Yes, it does but it's worth it! The more comfortable you become with this teaching style, the less time it will take to prepare.

What are possible behavior issues related to learning stations?

Conflicts between children.
These are inevitable because children are just learning how to relate to their peers. You can minimize conflicts by providing enough toys and materials to go around.

Learning stations generally alleviate problems.
Giving children the freedom to choose helps to avoid defiant behavior and acting out.

Want to know more?

Trister Dodge, D. & Colker, L. 1992. *Creative Curriculum for Early Childhood*. Washington D.C.: Teaching Strategies.
ISBN 1-879537-06-0.

Developmentally Appropriate Practice: Learning Stations

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Various activities are set up around the meeting space. Children are given sufficient time at the beginning of the program to explore at their own pace. The teacher interacts with individual children as they play.	Learning stations are set up around the room. Activities are generally closed with an intended outcome. Children rotate from one area to the next.	Children are greeted in the meeting room but given no time to explore the room. They are expected to sit and listen before going onto the next group activity.
↓ EXAMPLES ↓		
Children arrive at the picnic shelter for a program on frogs. There are four areas set up for them to choose from: a water table with lily pads and rubber frogs; play dough with rollers and cookie cutters; pond puzzles and water colors. Children play for ten to fifteen minutes before coming together for a welcoming circle.	Children arrive at the picnic shelter for a program on frogs. There are three areas set up: a frog song identification activity sheet; a frog and toad coloring sheet with green and brown crayons and frog puzzles. Children are asked to complete one or more activities but no more than three people can be at a station at a time.	Children arrive at the picnic shelter and told to sit on the benches. The teacher tells them about frogs and how to identify them.

Art

What does it mean?

Art is the making or doing of things that display form, beauty and unusual perception. It includes painting, sculpture, architecture and other media. It is the distinctly human ability to make things based on creativity, skill and beauty.

Why is it important?

One of the most important gifts we can give young children is the opportunity for creative thinking and expression. Exploring and experimenting with a variety of materials and techniques is an essential part of creating. Art is an activity based on sensory experience, similar to our experience of nature. It allows children to explore and experiment with creating something for its own sake or to express their knowledge of a subject with their own perspective and associations. Art in the early childhood years is child-oriented, as opposed to craft, which is teacher-oriented. For example, a craft activity (such as creating a snowman by gluing down three white circles) focuses on producing a finished product that matches a model, and may include matching a process or technique. Art is about expressing a concept in an individualized manner (like creating a three-dimensional wire sculpture) with a child's ability, energy and experience as a filter.

What are the benefits of offering art activities?

Exploration and experimentation

Children need to freely explore several art media, just for the sake of experience. For example, very young children are often more fascinated with the cause and effect aspects of painting for example, then they are with creating something specific.

Individualized expression and learning

Children are free to express, at their own level of ability with their own perspective, what they have learned.

Learning is sensory-based.

The more sensory the learning experience the greater the retention. Poetry and music relate to hearing. Drawing and painting relate to the visual. Dance relates to the kinesthetic. Sculpture and ceramics relate to touch.

Why don't educators offer more arts activities?

Crafts are so cute!

We often substitute craft projects for art for this very reason. But children learn more from making their own choices. We also use crafts as a way to help children learn to follow directions. This is an example of an inappropriate match between objectives and activity. When offering an art activity, your prime objective should be to encourage creative expression. There are more appropriate and meaningful ways to help children follow step-by-step directions.

Children's choices may not conform to the theme.

What is more important, conforming or creating? Adjust your expectations so it's not a big deal.

Parents like crafts.

Parents will love anything their child creates. Help them to appreciate the art for its own sake, rather than as a tool to compare their child's progress with others.

Material cost.

Crafts can be more expensive than free art

projects. Art can be created from reused or recycled materials, scraps and odds and ends.

Possible behavior management issues related to art activities.

A child may get upset over a forgotten or ruined project.

Because it is such a personal activity, children are often very protective of their individual works. Make sure children have a safe place to store art projects, their names are clearly marked and they have an opportunity to take their masterpieces home.

Children do not want to participate.

Many children are afraid to express themselves in front of others or art may not be their thing. Respect their choices but try to engage them in different ways. Frame the project in terms of play or find other related jobs for them to do, such as assistant dance director or dispenser of materials.

Tips

- Have plenty of art materials on hand and accessible to all children.
- Do not limit the amount or kind of materials children may use in their art.
- Show examples or copies of professional artists' work for inspiration.
- Have a display area for finished pieces.
- Art proof your space: no carpets, a slop sink, storage and so forth.

Want to know more?

Bos, Bev. 1978. *Don't Move The Muffin Tins. Roseville*, CA: Turn the Page Press. ISBN: 0931540003.

Lasky Lila & Mukerji-Bergeson, Rose. 1980. *Art: Basic For Young Children.* Washington D.C.: National Association for the Education of Young Children.

Developmentally Appropriate Practice: Art

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Children are free to use materials for creative expression. Children are free to interact spontaneously with materials.The process of creating art is emphasized over the product or how it looks.	Children are free to express and interact with materials but activity is still product-oriented.	Activity designed to recreate an example already created by the teacher (i.e. product-oriented). Focus is on following instructions instead of spontaneous interaction with materials.
EXAMPLES		
Children are given a variety of natural collage materials, glue, tape, staplers and other items to explore and experiment with when creating an art project.	Children make stuffed paper-bag pumpkins but can choose what color they want to paint it.	All children work at the same time, each following step-by-step instructions for making stuffed pumpkins, painted orange with green pipe cleaner vines.

Story Time

What does it mean?

Gathering together with a relevant book can be a great way to either generate interest or bring closure to a session with young children. It can be as simple as reading a picture book aloud, or as elaborate as acting out a favorite fairy tale. Many children who may not be at all familiar with the environment of a nature center are familiar with books and stories. Story time is also very flexible. A book can be shared to a few children during gathering or free choice time, along the trail or during snack. Story time is engaging for many children and has a high chance of being successful.

Why is it important?

The single most important activity for building the understandings and skills essential for readings success is reading aloud to children (Newman, et. al. 2000). And the early childhood years—from birth through age eight—are the most important period for literacy development. It aids in language development, builds knowledge and comprehension, fosters familiarity with letters and words and builds community.

Fiction or nonfiction?

Young children are more likely to be familiar with the story structure of fiction books and engaged by the characters. The predictable patterns and repetition encourage child participation and hold attention. However, young children are just grasping differences between what is real and what is imaginary. This provides a challenge in finding books that are engaging but also contain factual information. Even books with pertinent factual information often anthropomorphize animals. Use this as an opportunity to discuss various possibilities. Do you think bunnies talk to each other the same way people do? How do you think they communicate?

It is also possible to adapt more complicated non-fiction books by using pertinent information and quality illustrations or photos while changing the delivery. Try doing a "picture walk" where the pictures are shown but the text is paraphrased in a more kid-friendly style. In small groups, showing the pictures and asking for predictions from the children about what will happen next is engaging and allows you to impart some information while keeping it within their level of understanding.

What are the benefits to a well thought out story time?

Most children love to be read to.

Because most children are familiar with story time, it can be a calming and rewarding experience.

Good way to introduce subject.

Activates prior knowledge or summarizes key concepts.

Why don't educators use story time more often?

It can be frustrating.

If story time is unsuccessful re-examine your technique. Choose appropriate books with large illustrations, that encourage participation, and keep it short.

Common roadblocks to a successful story time.

Reading books that cover abstract concepts or are not age appropriate.

The availability of books covering science topics can create the temptation to give more information than is needed or can be absorbed. Young children learning about the food chain can grasp the basic ideas but don't need to hear details about how energy is created and stored in cells.

Expecting young children to sit quietly and listen.

Educators can become frustrated when prompting questions and comments especially when several children start talking at once about what seems to us to be unrelated issues. Choose stories that children can actively participate in to alleviate this issue.

What are the possible behavior issues related to story time?

Is it really a problem?

Behaviors that are seen as problems are less likely to occur when the educator adapts the structure to fit the group. With a small group, gathering in a circle and using props to provide active involvement can extend the amount of time children will be engaged. With any group, use an easel, big book or chart and take care to limit the amount of time children are expected to sit.

Children seem bored and start acting-up.

One way to avoid this is to create ways for the children to be actively involved. With a larger group, individual response and action is sometimes impossible. A well-orchestrated story time will provide opportunities for group response and choice. This can happen in simple ways by asking children to predict with a thumbs up or thumbs down, asking them to show the emotions of a character in the book, or through actions that match the words (such as making the noise of a bear in the woods by stomping feet or pretending to look through binoculars). Choosing books with a pattern and repetition allows for choral response and engagement.

Not everyone is interested in story time.

Try to have other quiet options for children to do if they are not interested in listening to a story. A puzzle or play dough often works.

Want to know more?

Conlon, A. 1992. *Giving Mrs. Jones a hand: . Making Group Storytime More Pleasurable and Meaningful for Young Children*. Young Children 47 (3): 14-18.

Fox, Mem. 2001. *Reading Magic: Why Reading Aloud to Your Children will Change Their Lives Forever*. Orlando, FL, Harcourt: ISBN: 0-156010-76-3

Neuman, S., Copple, C., Bredekamp, S. 2000. *Learning to Read and Write: Developmentally Appropriate Practices for Young Children*. Washington, D.C.: National Association for the Education of Young Children. ISBN 0-935989-87-0.

Developmentally Appropriate Practice: Story Time

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
A well-chosen book is read using props or puppets to actively engage children and allows for a variety of ways to participate.	A book is chosen that is appropriate and some attempt is made to engage children in action, some variety is allowed in participation.	An inappropriate book is chosen and the expectations for children are unrealistic; sitting quietly and passively for long periods of time; not responding, using props as visuals that children aren't allowed to touch.
↓ EXAMPLES ↓		
During a book on animal noises, children are encouraged to make the animal voice at the appropriate time in the story. The reader has several animal puppets for the children to use during the story. Comments and questions from children are welcome throughout the story.	During a book on animal noises, children are encouraged to make the animal voice at the appropriate time in the story but are not allowed to ask questions or comment until the story is finished.	During a book on animal noises, children are expected to sit quietly without speaking. The educator makes all the noises herself. Another book has small, abstract drawings and makes no use of rhyme or humor.

Notes

Outdoor Exploration

What does it mean?

For environmental educators, time outdoors means exploring all the nooks and crannies of forests, fields and ponds. There is a constant possibility for new discoveries and unfolding mysteries. Unfortunately, this type of exploration is not available to many young children especially those in formal daycare or preschool situations. Outdoor time for them may be limited to a few minutes a day in a fenced-in playground with a pea gravel surface and very little, if any, opportunities for interacting with nature.

Why is it important?

Because young children learn through active participation with their surroundings, the natural environment provides an inexhaustible supply of learning opportunities. Frequent, positive and direct experience in the outdoors is essential to developing positive attitudes toward the environment—attitudes that are formed very early in life.

What are the benefits to outdoor exploration?

This may be children's only chance.

Although you don't have to have a wilderness experience to appreciate nature, it does help to have direct experience. As children's lives are increasingly structured to accommodate busy family schedules, there is less time even for backyard play.

It contributes to children's physical, emotional and social development.

Because the natural world is rich and dynamic, free outdoor exploration can increase children's confidence, comfort level and coordination.

Why don't educators explore the outdoors more?

Fear.

It takes a lot of skill and confidence to lead a group of children on a nature hike. Helping other educators become comfortable in the outdoors by modeling appropriate techniques can be an indirect benefit of outdoor exploration.

What are the possible behavior issues with exploring the outdoors?

Children may act inappropriately.

Children who are inexperienced or uncomfortable in the outdoors may act out in a variety of ways—pestering others, running ahead, whining or throwing sticks. Help children feel secure by letting them know what to expect ahead of time, giving them a job or a role along the trail and by telling them it's the adult's job to keep them safe and unharmed.

Tips.

Keep track of your kids.

- Do frequent head counts. This is especially important after moving from inside to outside and vice versa, after passing another group on the trail and after each activity. Remember, it is your responsibility to keep track of them, not the other way around. Never blame a child for getting lost.
- Always have one adult in front and one in back. As long as there are children, there will be stragglers and rushers. Honor their pace as much as possible while still keeping them safe.

- State the rules in language children understand. For instance, if one of the rules is to stay behind the leader, say, "If you can see my backpack, you're in the right place!" instead of "Stay behind the leader." The more concrete your language is, the easier it is for children to understand the boundaries. Keep rules to a minimum, give reasons, stay positive and make rule making into a game whenever possible.

Keep it active.

- Use focusing tools. It is much easier and enjoyable to give children tools to help them focus on certain tasks while on the trail. Use toilet-paper tube binoculars in I spy games, bring along paper bags, egg cartons or other containers for collecting valuables and of course, magnifying lenses. Avoid handouts or check-off activities—they are not hands-on!
- Avoid Walk and Talks. This is a time for personal discovery not lecturing. Take the children's lead and let discussions flow. Ask open-ended questions (those where there are no right answers). Find places with natural boundaries where children can play—a rock or log pile, a fire ring in the forest or the edge of the pond. Encourage dramatic play. Stop on or near a stump and pretend to be squirrels building a nest or gathering food.
- Bring along pieces of clay to press into bark and discover the impression. Making rubbings with tracing paper and crayons works well.

Keep it comfortable.

- Keep extra clothes on hand. You never know what accidents are waiting to happen. Keep a full set of clothing on hand—underwear, socks, shoes, pants, shirts, coats, hats, mittens and so forth.
- Anticipate their needs. Remember, they're egocentric. If they are uncomfortable in any way, shape or form, they'll let you know. Generally, they have less tolerance than older children. Therefore, bring a quilt to sit on instead of the grass, be aware of the temperature and the need for sun or shade, bring water or snack if you're going to be on the trail for a long time.

Want to know more?

Rivkin, M. 1995. *The Great Outdoors: Restoring Children's Right to Play Outside.* Washington DC: National Association for the Education of Young Children. ISBN 0-935989-71-4.

Wilson, Ruth. 1994. *Environmental Education at the Early Childhood Level.* Troy, OH: North American Association for Environmental Education. ISBN 1-884008-14-3

Developmentally Appropriate Practice: Outdoor Explorations

MOST APPROPRIATE	SOMEWHAT APPROPRIATE	LEAST APPROPRIATE
Children are encouraged to discover things along the trail. The group travels short distances, stopping frequently to regroup and provide time for free exploration and play. Discoveries are made by the children and discussions are open-ended. There is always at least one adult in front and one in back.	The group moves at a steady pace along the trail and is told to look for specific things at occasional stops. Information is conveyed about things they see along the way.	Children are taken on a *walk and talk*. They walk along the trail and are expected to keep up and listen.
EXAMPLES		
A small group of three and four-year-olds and their teachers take a short walk to the field. They find a group of hay bales to climb and jump on. They then walk along the trail to a pond where they look for sunfish and make pretend fishing poles. Some children play school bus on a nearby log. Some children count earthworm castings found in the middle of the trail.	A naturalist leads the group along the trail at a quick pace. He stops occasionally and encourages the children to look for things under rocks and logs. He tells the children the names of things they find. They move quickly to the nearby field to identify prairie flowers.	A naturalist stays in front and leads the children down the trail. They stop occasionally and he tells them interesting things about forest ecology before moving on.

Section V
Possible Program Formats

Possible Program Formats

Infant and Toddler Programs

Definition of the group.

Infants and toddlers are children between the ages of 6 and 36 months, accompanied by an adult attending an organized program.

Why should we teach infants and toddlers?

The whole world is new and wonderful to one-year-olds, who have generally just begun to walk. Things in nature move on their own and change. Colors, textures and sounds are real. This is the best time to introduce natural environments to toddlers as they begin to enjoy the freedom to move, experience the freshness of the outdoors and become comfortable in the natural environment.

Since most children this age are accompanied by an adult, this is a unique opportunity for encouraging and fostering behaviors in adults that will allow them to encourage discovery, learning and respect for nature in their children.

Special considerations when teaching infants and toddlers.

- Be sure to check outdoor areas carefully, know harmful plants and keep children away from them. Know harmful animals in your area.
- Keep hands and fingers out of holes.
- Supervise the children closely for things going into their mouths.
- Stay within a few yards of children at all times.
- Encourage clothing that protects children from sun, cold, rough and sharp natural objects.
- Provide program supplies in low containers or on the floor or ground.
- Choose supplies that cannot be swallowed.
- Safety proof the indoor space so things cannot be unplugged, pulled or pushed over and cover sharp edges and corners.
- Use strollers, wagons or sleds for longer distances allowing children to choose when to walk or ride.
- Remove anything you don't want toddlers to touch from their reach.
- Plan for diapering.

Tips

Infants and toddlers need something to do when outdoors. If they can't pick up flowers and leaves, they'll need some alternatives.

- Bring along a small stuffed animal or sprinkling can with water.
- Redirect them to safe things that can be picked up and carried.
- Show them how to touch gently.

How to involve adults

- For outings beyond the building's yard, make sure there is one adult for every mobile child.
- Send a letter to participants prior to class indicating philosophy and expectations.
- Remind or instruct adults to talk to the toddler about the things they do, see, hear and touch.
- Remind adults to encourage children to explore with their senses.
- Encourage adults to show appreciation and respect for nature.
- Instruct adults to be prepared with extra clothing after getting wet and dirty.
- Encourage adults to not obsess about children getting wet or dirty.
- Encourage adults to adjust to toddler's interests and pace indoors and out.

Adult-Child Programs

Definition of the group

Classes are composed of an adult partner with one or two children, and activities are designed for adults and children to do together.

Why should we provide adult-child programs?

Children, when in the company of a caring adult, are in the best possible setting for gaining a life-long reverence for the natural world. And it is a delight for an adult to see the world once again through the eyes of a child.

For the naturalist it is an opportunity to reach both the children and the adults with them, though of course, the primary focus is children. For the children having an adult with them gives them the confidence to try new things, to interact with the adult and to experience interactions with other children. For many children these classes are one of their first experiences with learning outside of the home.

Special considerations for teaching adult-child programs.

- Frequently an additional older child or infant is also present.
- Give an older child a helping role or job.
- Offer to hold the infant while the parent participates with their other child.
- Trail hikes need to be stroller friendly. Distance is not important. Walks and hikes do not need a destination, focus on a quality experience. When using strollers, wagons or sleds for longer distances, allow the children to choose when to walk or ride.
- Plan dressing time before and after going outside. If going outside, plan this portion of the program to be either at the beginning or end so the children only have to take off rain or cold weather clothing once.
- Remove all untouchable items from the program area so that children are encouraged to touch everything in the area, and "don't touch" isn't an issue.
- Safety proof the indoor space so things cannot be unplugged, pulled or pushed over and cover sharp edges and corners.

How to involve the adults in your program.

- Remind and or instruct the adults to talk to the children about the things that they do, see, hear and touch. Make sure they understand they are to follow their child's interests and the child does not have to do each and every activity offered.
- Remind the adults that touching, getting dirty and getting wet is OK in this class.
- Adults can encourage the children to touch gently and explore safe natural things with their senses.
- Stories, books, puzzles and puppets can be provided for adults to share.
- Activities that require the child and adult to participate together are encouraged.

Want to know more?

Taylor, Katharine Whiteside. 1982. *Parents and Children Learn Together.* New York: Teachers College Press. ISBN 0-807726-38-9

Stone, Jeannette Galambos. 1987. *Teacher-Parent Relationships.* Washington D.C.: National Association for the Education of Young Children. ISBN 0-935989-10-2.

Dodge, Diane Trister, et al. 1999. *The Creative Curriculum for Infants and Toddlers.* Washington D.C.: Teaching Strategies. ISBN 1-879537-40-0.

Possible Program Formats

Drop-Off and Camp Programs

Definition of the Group

Children are dropped off for programs and parents or guardians are generally not present for the program. Programs are usually between 1 ½ and three hours long.

Why should we teach drop-off programs?

Foster independence in young children. For many, it may be their first experience in being in a group setting. It is a chance to encourage peer relationships and exploration of natural world in a safe and secure setting.

Special considerations for teaching drop-off programs.

- Children may be fearful of new surroundings and there may be separation anxiety on the part of the child or adult. It is essential to have enough staff at drop-off time to be able to distract the children with activities to lesson the stress of separation from their adults.
- Plan to have a major portion of the program be child driven with plenty of choices.
- Communicate to parents that children will be going outside in nearly all weather conditions, insect repellent and sunscreens should be applied before the children come to the program. Children need to be dressed for the weather.
- Adults delivering children to camp need to be aware of the drop-off and pick-up procedures. Use a check-in and sign-out system and get written permission from the parent if anyone other than them is to pick up their child.

Tips

- Give each child a place of his or her own. This makes sorting out projects at the end of the day much easier and gives children a feeling that this is their space.
- Have books, puzzles, paper, crayons and toys available for early arrivals.
- Have children bring their own snacks. This keeps camp costs down and children will usually eat what they bring. You can also avoid food allergy problems.
- Keep "safe snacks" raisins, pretzels, Cheerios and graham crackers on hand for children who may not have a snack.
- When planning camp, allow plenty of time for play. Even though as an adult it may seem "like a waste of time," children are processing information through play (see Learning through Play).
- Try to schedule some time during camp, a few minutes on the last day for example, for parents or guardians to visit the camp and take part in some of the activities. Children are thrilled to show off what they have learned and done.

Adapting the environment

- Use child-size chairs and tables or set up on the floor or ground.
- Childproof the room and outdoor environments for possible safety concerns.
- Set clear physical boundaries for children in the outdoors.
- Provide for space for large motor activities.
- Use a lesson plan that provides for many different types of learning, large and small muscle, science and discovery, sensory, art, math and manipulatives, reading, music, dramatic play and even cooking.

School Groups

Definition of the group.

Preschool, daycare and kindergarten classes within the established public and private educational system.

Why should we teach school groups?

One of the most obvious reasons to work with this group is because there is a strong demand for programming. Teachers want their students to have unique, hands-on educational experiences that nature centers can provide. Naturalists can provide expertise and materials that often classroom teachers do not have. In addition, naturalists are able to help prepare students to learn about the natural world and lay the foundation for them to become environmentally aware citizens.

Special considerations for teaching school groups

- Have a sufficient number of adults working with the group (one adult to eight children or lower is ideal).
- Children in a formal school group are a captive audience and cannot choose to leave the center, but they need the option not to participate in all activities (see Choice).
- If parents aren't present and providing a certain comfort level, naturalists may have to deal with children's fears or concerns.

Tips.

- Learning stations should include some activities that can be easily accomplished by students without adult assistance when the adult to child ratio is not one to one.
- Have enough supplies so that each child has access to them.
- Include pre- and postvisit activities that teachers can use in the classroom.
- Allow for bathroom breaks if program is 1-½ hours or longer.

How to involve adults.

Use teachers, aides and volunteers in programming to keep the adult-to-student ratio low, but plan ahead with the adults so that they have set roles (for example, give them instructions on how to work with their children at each station or during activities).

Adapting the environment

- Set tables and chairs to lowest height if possible or sit on ground.
- Put visuals at children's eye level.
- Define areas for learning stations (e.g. can use masking tape on the floor to make station boundaries, use carpet squares for children to sit on).
- Have enough materials so each student has one of whatever's being handled.
- Make sure learning stations are set up appropriately.
- Provide a variety of manipulatives.
- Provide open-ended activities that accommodate multiple levels.
- Allow for a variety of learning styles and appeal to a variety of senses.
- Remove all untouchable items from area.
- If doing a hiking program, select trails that are short distances, level and as free as possible from hazards such as poison ivy.
- Hikes should not be destination-oriented. The experience of being outdoors is more important than finishing the hike.

Section VI:
Developing and Evaluating Your Program

Program Components

This is a list of possible program components and sample activities you can use when planning programs. Mix and match them according to your program area and timeline.

PROGRAM COMPONENT	SAMPLE ACTIVITIES
Gathering or Free Choice Set up five or six learning stations around an indoor or outdoor meeting space. Provide at least fifteen or twenty minutes for children to explore the activities at their own pace.	Sensory tables Blocks Puzzles Play dough Collage materials Painting
Sensory Tables Large tubs filled with various materials for sensory exploration	Water with real or rubber pond animals, buckets, nets and similar items. Sand with buried beach treasures, scoops, animals and so forth. Bird seed Soil with trowels, vegetables, worms, flowers, pots and related items.
Songs and Finger Plays Sing songs with simple or familiar melodies and lots of motion.	Itsy Bitsy Spider Five Green and Speckled Frogs Two Little Blackbirds
Story Time Choose short storybooks with clear, large illustrations and appropriate story lines.	Picture books Story telling Flannel board stories Big books
Dramatic Play Narrate short plays for children to act out. Provide costumes and props for children to act out their own stories.	How a seed grows How spiderlings disperse Box turtles searching for strawberries
Large Motor Games Make games instant and simple with very few directions and rules. Everyone should be able, but not required, to participate.	Join hands and make a snake Duck, duck, goose (gray duck) Fly like geese

PROGRAM COMPONENT	SAMPLE ACTIVITIES
Small Group Games A hands-on activity that everyone can do all at once or one at a time.	Salamander concentration Magnetic fishing for pond life
Art Create projects that offer lots of choice with no particular end product and few, if any directions.	Paint with feathers Finger paint with clay or mud Make mud pies
Outdoor Explorations and Trail Activities Alternate between structured and unstructured activities. Use focusing techniques or games.	Toilet paper tube binoculars Egg carton collecting boxes Hunt for worms Climb on a fallen tree

Developmentally Appropriate Practice at a Glance

Emphasizing and supporting the individual and collective abilities of young children.

What Children are Learning and Doing	Child-Centered Approach MOST APPROPRIATE	Teacher-Directed Approach LEAST APPROPRIATE
Observational Skills Have attention spans largely determined by the activity, the interest level and the individual.	• Programs are one to three hours in length, providing adequate time for free exploration of classroom materials, social interaction and large motor activities.	• Programs are limited to 30 minutes or less because children have short attention spans.
Learning to focus and maintain attention and how to shift focus from one thing to another.	• Transitions are kept to a minimum. Songs, games, rhymes and so forth are used to ease transitions.	• Teachers quickly move from one activity to another, never spending more than a few minutes on one thing at a time. Disruptions are common during transition times.
	• Knowing that children need time to become engaged with materials or each other, teachers allow adequate amounts of time for each section of the program.	• Teachers give little or no warning before going to another activity. Lectures and instructions used to move children from one area to another.
Learning to follow routines and transition from one program component to another.	• Teachers follow a predictable routine to help children feel comfortable, in control and to recognize limits.	• Teachers decide what activity comes next and children are given little if any clue about what comes next.
Content Concrete thinkers. They like to learn about relevant things they can experience directly. Like familiar activities and materials because of the feeling of master and competence. Learning concepts about nature and the world.	• Activities are based on what interests children and what is familiar to them. Concepts are concrete (clouds) instead of abstract (weather).	• Themes or concepts are broad and abstract with little relevance to children's previous experiences or interests. For example, presenting a unit on the tropical rainforest for children young children in the midwestern U.S.

What Children are Learning and Doing	Child-Centered Approach MOST APPROPRIATE	Teacher-Directed Approach LEAST APPROPRIATE
Play Learning to become independent, to find and solve problems, make comparisons and experiment. Learning how to initiate and maintain play with others and negotiate conflicts Learn through active manipulation of materials.	• The gathering site or classroom is equipped with toys and activities that are familiar to children: animal puzzles and puppets, play dough, blocks, animal figures, sand or water play, and so forth • At least 20 minutes of free choice time is provided. Children are free to choose from among several activities presented around the room or gathering site. • Child-sized furniture is used whenever possible and only for suitable activities. • Children are encouraged to explore and experiment with a wide variety of materials. They have ample opportunities to discover problems and solutions. • Children freely explore (within safe boundaries) their environment. Teachers follow the children's lead, discovering along side them. The children or teacher initiates games and exploration activities. • The gathering site or classroom has defined areas for block play, messy play, quiet reading, and so forth Outside, natural boundaries are used to guide children: trails, meadows, gardens, and similar things.	• The gathering site or classroom has little or no materials or objects for play. Children are discouraged from exploring the room and limited in their social interactions with others. • Teacher directs the children to move from one activity to the next as a group and all do the same thing at the same time • Children are expected to sit in adult-size tables and chairs for the majority of the program. • Materials are limited in amount and variety. Children are instructed on the "right" way to use materials. • Children are taken on a traditional "walk and talk" hike where natural concepts are pointed out and discussed. • There are few physical boundaries to help children organize their play.

What Children are Learning and Doing	Child-Centered Approach MOST APPROPRIATE	Teacher-Directed Approach LEAST APPROPRIATE
Self Discovery Learning to express themselves creatively through different means and imagination. Learning to be self-confident and self-directive. Learning that there are different points of view and that other people act and think differently than they do.	• Opportunities for creating open-ended art activities are offered but not required. Children have easy and full access to a wide variety of art materials. • Costumes and props are available to encourage spontaneous play-acting. • Lots of time, choice and materials to play freely.	• Everyone makes identical craft project with the same materials, directions and end result. • No opportunities to "become" something or someone else through dress-up, or dramatic play. • No time, little choice, and few materials to play freely.

How Developmentally Appropriate is Your Program?

For each category, rank your program from zero to four. Zero means it most closely resembles the description on the left and four means it most closely resembles the description on the right. At the end, total your program's points to rate the developmental appropriateness of your activity or program.

Developmental Characteristics: Focuses on cognitive or intellectual understandings only.	0	1	2	3	4	**Developmental Characteristics:** Fosters the development of the whole child: social/emotional, cognitive, physical, perceptual, language and so forth.
Inauthentic Experiences: Only indirect learning experiences (books, videos, cartoons or similar items) offered. Unrealistic, cartoon-like and/or inaccurate toys and images are used.	0	1	2	3	4	**Authentic Experiences:** Direct learning with real and authentic objects. Realistic, accurate toys and images used when the real thing is not available or practical.
Inappropriate Topic: Abstract topics or concepts.	0	1	2	3	4	**Appropriate Topic:** Concrete topics or concepts.
Passive Learning: Children have a passive presence with the activity.	0	1	2	3	4	**Inquiry-Based Learning:** Requires active involvement of children.
Learning Objectives: Objectives are product oriented and emphasize factual learning only.	0	1	2	3	4	**Teaching Objectives:** Objectives are process oriented with both content and developmental goals include.
Diversity is Overlooked: Activities represent the dominant culture and normal range of abilities only.	0	1	2	3	4	**Diversity is Valued:** Diverse cultures and abilities represented and celebrated.
Hands-Off: Lectures or demonstrations only.	0	1	2	3	4	**Hands-On:** All objects used by children freely.
Closed Activities: Only one right way to do an activity.	0	1	2	3	4	**Open-Ended:** Children use materials freely and at will.
No Choice: Children do what, when and how the instructor says.	0	1	2	3	4	**Choice:** Children choose from among several activities.
Craft: Product oriented.	0	1	2	3	4	**Art:** Process oriented.

Key

1-40	Congratulations! You're program is developmentally appropriate!
21-30	Has potential but needs improvement.
11-20	Re-examine your approaches.
0-10	Modify or eliminate the program

Epilogue: Reed Returns

After attending a workshop on how to design programs for preschoolers, Reed knew what she had to do to improve her animal home program for three-year-olds and their parents. Knowing that young children think differently than adults, tend to be egocentric, construct their own meanings and are learning about everything all the time, Reed modified the program. She expanded the time from 30 to 90 minutes and set up the classroom with six learning stations including blocks, puzzles, a sensory table, painting, play dough and book area. She planned a short story time, a bathroom break, a hike through the woods with some time for free outdoor exploration and dramatic play.

The program was a huge success from the outset. When the children and adults arrived in the classroom, they knew exactly what to do. For almost 30 minutes, adults and children painted, read, built animal homes from the blocks and made bird nests out of play dough. Children greeted the fish in the aquarium and talked about why fish live in water and why they don't have legs. Reed brought out a real hornet's nest and taught the children how to carefully touch the papery walls. Jose recalled getting stung by a bee and Martha said her dog had fleas.

Everyone gathered for a story and songs, except Justin, who preferred to listen as he played with the play dough. Reed told a story about the different animals of the forest and where they make their homes. She passed around a basketful of pictures of different animals and let the children select the one they wanted. As she read the story, each child could place their picture on a mural of the forest.

After clean up and a bathroom break, the group headed out on the trail. Everyone was busy counting all the animal homes they could find. To help them keep track, Reed gave every pair a hole punch and told them to find a leaf on the ground. Every time they found an animal home, they could punch a hole in their leaf.

Half way down the trail they came upon a small lean-to shelter someone had made from tree branches. Children and adults began to play house and pretend to be animals in the forest.

Before long it was time to go. As Reed said goodbye, she heard Meta exclaim to her grandfather, "Next time we come, I'm going to find nature!"

Section VII
Resources

Resources

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Web Sites

Early Childhood Online: http://www.ume.maine.edu/ECEOL-L/

National Association for the Education of Young Children: http://www.naeyc.org/

Early Childhood Education Web Guide: http://www.ecewebguide.com/

Earlychildhood.com http://www.earlychildhood.com/

Clearinghouse on Elementary and Early Childhood Education http://ericeece.org/

World Wide Web Sites Sponsored by ERIC/EECE http://ericps.crc.uiuc.edu/

Zero To Three http://www.zerotothree.org/

Inclusive Materials

Knowledge Unlimited, www.knowledgeunlimited.com, 1-800-356-2303

Minnesota International Center, www.micglobe.org, 1-612-625-4421

Asia Kids Catalog www.asiaforkids.com, 1-800-888-9681

Redleaf Press, www.redleafpress.org, 1-800-423-8309

Magazines

Young Children. Journal of the National Association for the Education of Young Children, 1509 16th St., NW, Washington, D.C. 20036-1426, 1-800-424-2460.

Childhood Education. Journal of the Association for Childhood Education International, The Olney Professional Building, 17904 Georgia Ave., Suite 215, Olney, MD 20832, 1-800-423-3563.

Early Childhood Today. Scholastic, Inc., 555 Broadway, NY, NY, 10012, 1-212-343-6600.

Supply Resources

Lake Shore Learning – art supplies, dramatic play, manipulatives, and more.
www.lakeshorelearning.com

Discount School Supply – media, art supplies, dramatic play, manipulatives
www.earlychildhood.com

Acorn Naturalists-Science and EE Materials
www.acornnaturalists.com/

Environmens, Inc., P.O. Box 1348 Beaufort, SC, 29901-1348, 1800-342-4453.

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